

EMPLOYER GUIDE TO OCCUPATIONAL HEALTH AND SAFETY



IN THE
ENTERTAINMENT INDUSTRY



AUSTRALIAN ENTERTAINMENT INDUSTRY ASSOCIATION

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Disclaimer:

This publication contains information regarding occupational health safety and welfare, injury management and workers compensation. It includes some of the obligations under legislation however, to ensure that you comply with all relevant legislative requirements, reference must be made to the relevant acts and regulations.

What are Industry Standards?

Industry Standards are developed by specific industry groups and usually provide practical advice and guidelines for controlling hazards and risks within a particular industry. This publication, *An Employers' Guide to Occupational Health and Safety in the Entertainment Industry* is an Industry Standard and has been developed to provide employers and employees in the Entertainment Industry in New South Wales with an understanding of their legal responsibilities under Occupational Health and Safety (OHS) legislation and to provide practical guidance on how to manage risks to the health and safety of persons working in the industry and to members of the public who could be affected by entertainment activities.

This *Employers' Guide to Occupational Health and Safety in the Entertainment Industry* seeks to provide guidance to those within the industry and is aimed at ensuring the health and safety of both industry employees and those associated with the industry operations. This Industry Standard is not enforceable by law, however it aims to achieve the same if not a better result than general national standards and Codes of Practice. Whilst these guidelines have predominantly been developed for employers in New South Wales, employers in other states may find them useful. It should be noted that reference to legislative requirements in the document relate to New South Wales. Employers from other states using the guidelines must check their local legislative provisions. Whilst there is some commonality in legislative provisions in Australia, there are some substantial differences.

The Industry intends, after a suitable period of assessment of the impact of this guide, to seek approval of the document as an Approved Code of Practice and to have the guidelines adopted in other Australian states and territories.

Preface

This guide has been developed to assist people in the entertainment industry achieve the highest possible standard of health and safety in the work they perform. The principal objective is to assist people in the entertainment industry in New South Wales to apply the principles of risk management and consultation contained in occupational health, safety and welfare legislation, particularly the regulations. In providing these basic standards and safety measures it is hoped to encourage a consistent approach while leaving scope for flexibility, taking into account the size and the nature of the entertainment activity. It is recognised that each event will be different and will require different configurations of different elements, management systems, and provisions.

This Industry Guide has been developed in consultation with employers and employees in the entertainment industry in New South Wales. It has been designed to be read in conjunction with the Safety Guidelines for the Entertainment Industry which were published in August 2001.

Using this guide

What is the aim of this guide?

The aim of this guide is to protect the health and safety of persons from hazards and risks arising out of entertainment activities by:

- a) eliminating, or where this is not reasonably practicable, minimising the risks to health and safety arising from the carrying out of entertainment activities and .
- b) ensuring that hazards associated with the carrying out of entertainment activities are identified and the resultant risks to health and safety are assessed and controlled.

What are the objectives of this guide?

The objectives of this Guide are:

- a) to provide practical guidance to all parties engaged in planning, designing, preparation and conduct of work for entertainment activities;
- b) to provide information on the legal requirements applicable to persons engaged in entertainment activities;
- and
- c) to provide information on the resources available to persons engaged in entertainment activities.

Who is this guide for?

This guide has been developed mainly for employers, but also for employees and other parties involved in entertainment activities. While the definition of an employer under the NSW Occupational Health and Safety Act means a person who employs persons under contracts of employment or apprenticeship, for the purposes of this guide, employers include but are not limited to production companies, theatrical producers, cinema operators, set designers and manufacturers, venue operators, venue hirers, dance, theatre and opera companies, orchestras, ensembles, musicians and bands, circus performers and companies, crewing services, touring services, equipment hire contractors as well as those who occupy or control premises used as a place of work but these guidelines do not cover sporting activities or recorded media (film, television, radio, news and current affairs).

When to use this information

This guide can be used to assess the effectiveness of existing systems or arrangements for occupational health safety and welfare and to check that all sources of risk have been identified and ideally eliminated or where that is not possible, adequately controlled. If you are setting up a new business, the guide can be used to assist you in addressing OHS legal responsibilities associated with entertainment activities.

How to use this information?

The guide distinguishes between legal requirements and advice on good practice by the use of the following expressions:

Legal requirements - Words such as “must”, “require” and “mandatory” indicate statutory requirements with which the relevant person, usually the employer, has a legal obligation to comply.

Recommended practices - Words such as “should”, “may” and “consider” indicate courses of action which while not prescribed by legislation, the guide is recommending to the duty holder. That person may choose an alternative method of achieving a safe system of work, but needs to justify this choice as achieving the same or better standard of health, safety or welfare.

This guide addresses issues that are common to Entertainment Industry employers and does not purport to provide information of all areas covered by legislative requirements in New South Wales nor the rest of Australia. All parties using the guide should ensure that reference is made to specific legislative requirements.

What do the symbols in this guide mean?

The following symbols are used in the text to highlight things you need to take into account and assist you to determine what you need to do and the resources or tools you require to carry out a task or function.



Assess the risks and implement effective control mechanisms



Consult and communicate



Legal obligations that must be followed



Tools that can assist implementation



The process of hazard identification, risk assessment and implementation of control mechanisms



Considerations for out-door events

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1 OHS Legislation

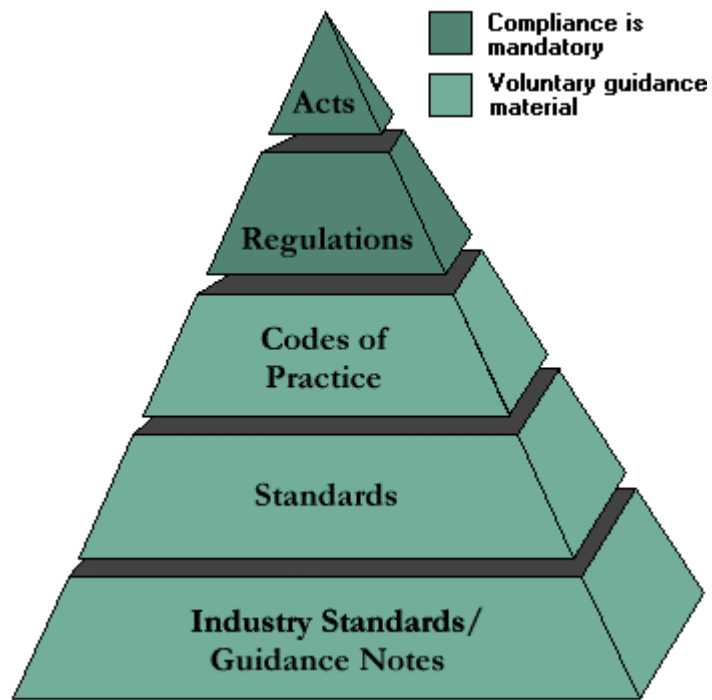
1.1 Legislative framework

The legal requirements for occupational health and safety in most Australian jurisdictions, including NSW comprise:

- **A *Mandatory Principal Act*** — made by parliament and enforced by the relevant government department (WorkCover NSW), the *NSW Occupational Health and Safety Act 2000* sets out legal rules that govern workplaces with the principal objective of ensuring persons in workplaces do not suffer injury or illness. (Refer to Appendix 3 – Section [10.3](#))
- ***Mandatory Regulations*** - made under the principal Acts governing occupational health and safety legislation. Regulations support a principal Act by outlining how the general obligations of the Act will be applied in the workplace. Regulations are usually made in relation to a particular type of health and safety issue. In NSW the relevant Regulation is the *Occupational Health and Safety Regulation 2001* (Refer to Appendix 3 – Section [10.3](#))
- **Evidentiary Approved Codes of Practice** - State and Territory governments are able to approve Codes of Practice through the powers of the principal Act. Some of the most relevant Approved Codes of Practice applicable to the Entertainment Industry are listed in Appendix 1 (Section [10.1](#))
- ***Standards*** – There are two main types of standards applicable to occupational, health, safety and welfare. These are:
 - **National Standards** produced by the National Occupational Health and Safety Commission (NOHSC). These standards usually deal with workplace hazards. A list of some of the applicable National Standards is included in Appendix 2 (Section [10.2](#)) and
 - **Australian or Australian and New Zealand Standards** produced by Standards Australia in consultation with overseas standards bodies and Australian working parties. These standards provide technical and design guidance information. Standards are only enforceable by law if they are specifically included in State Acts and or Regulations.
- ***National Guidance Notes***

The National Occupational Health and Safety Commission (NOHSC) develops Guidance Notes which provide practical advice and guidelines for controlling hazards and risks. A list of some of the applicable Guidance Notes is included in Appendix 3. (Section [10.3](#))

The following diagram from the National Occupational Health and Safety Commission shows the status of the legal framework in Australia.



(Source: National Occupational Health and Safety Commission)

1.2 Duty of Care

Under the NSW Occupational Health and Safety Act, all employers owe a duty of care to all people at the workplace including those people who are not employees. This duty encompasses the welfare of employees.

Duty of care requires everything reasonably practicable to be done to protect the health and safety of people at a workplace.

The NOHSC explains: “Reasonably practicable”

“This allows the duty holder to choose the most efficient means of controlling risk from a range of possibilities. The duty holder must show that it was not reasonably practicable to do more than what was done and that they had taken reasonable precautions.

A number of factors are taken into account to determine what would be reasonable and practical. These factors include the:

- Nature and severity of the hazard;
- Knowledge of severity of the hazard;
- Knowledge of solutions;
- Availability of solutions;
- Common standards of practice;
- Cost of solutions.

Codes of practice are an example of 'common standards of practice' that could be used in court to illustrate what the employer, manufacturer etc should have been doing in order to prevent or control a hazard.

In summary, employers, manufacturers, designers, suppliers, persons in control of workplaces and persons who erect or install plant and equipment must ensure:

- Safe property, which includes premises (safe access and exit), safe plant and equipment, materials and substances (raw materials, chemicals, products, stock etc).
- Safe systems of work, which includes work practices, manufacturing processes, standard operating procedures and administration procedures.
- Safe people, which includes providing them with suitable information, instruction, training and supervision. For example the safe use of plant and equipment, materials and chemicals and information about the working environment and health and safety generally”

This duty of care extends to:

- ensuring that any plant (Refer to Section 9.1) or substance (Refer to Section 9.7) provided for use by the employees at work is safe and without risks to health when properly used,

- ensuring that systems of work and the working environment of the employees are safe and without risks to health,
- providing such information, instruction, training and supervision as may be necessary to ensure the employees' health and safety at work, (Refer Section 5)
- providing adequate facilities for the welfare of the employees at work

and

- in relation to persons who are not employees, ensuring that any premises controlled by the employer where the employees work (and the means of access to or exit from the premises) are safe and without risks to health.
- Others who may have a duty of care:
Directors and others with controlling influences on an organisation or event, managers and supervisors, product designers, manufacturers, suppliers, persons who erect or install plant and equipment, venue owners, venue controllers, hirers, employees and contractors.

1.3 Employee duty of care

In addition to the responsibilities placed on employers under OHS legislation, employees also have specific responsibilities. Employers should be aware of and understand these responsibilities that include:

- taking reasonable care for the health and safety of people who are at the employee's place of work and who may be affected by the employee's acts or omissions at work.
- co-operating with his or her employer or other person so far as is necessary to enable compliance with any requirement under the legislation that is imposed in the interests of health, safety and welfare.
- not, intentionally or recklessly, interfere with or misuse anything provided in the interests of health, safety and welfare under occupational health and safety legislation.

2 Management of OHS

2.1 Due diligence

Due diligence in the workplace means that employers, supervisors and others understand and carry out their legal duties, assess the risks and hazards in the workplace on an on going basis and take all reasonable precautions with respect to those risks and hazards. Application of due diligence principles requires a proactive approach. It will assist in a careful and systematic identification and assessment of specific workplace hazards and the establishment of control measures to prevent injuries and illness at work.

It is important to remember that what may constitute due diligence in one case may not constitute the same level of due diligence in another case. Whether a person has acted diligently depends on the actions taken in the circumstances for that particular case.

The following elements of a Safety Management Plan will contribute in establishing that an employer has acted with due diligence:

- Establishing an effective Occupational Health and Safety Management System which includes:
 - Establishing an OHS Policy and supporting policies where relevant, and the management commitment to ensure its effectiveness.
Policies should commit the organisation to legal compliance, allocate responsibilities and be endorsed by senior management. Effectiveness will depend on the supporting procedures and work systems, planning and monitoring and the time and resources allocated to them.
- Carrying out all activities under the Act and ensuring that the organisation complies with the Act and associated legislation;
- Setting up a well documented risk management system for identifying, reporting and responding to all hazards in the workplace;
- Consulting with employees on all matters which could affect their health and safety, including the identification of hazards and assessment of risks.
- Establishing safe practices, procedures and controls that are specific to the hazards in the workplace, that either meet or exceed the requirements of the legislation;
- Providing instruction and training on an on-going basis to all employees;
- Communicating regularly with employees about foreseeable health and safety hazards;
- Allocating adequate time and resources for the health and safety program to be established and followed by all in the workplace;
- Monitoring, auditing, evaluation and review of the Safety Management Plan on a regular basis.

3 Risk Management



Employers must identify any foreseeable hazards, assess the risks associated with the hazards and take action to eliminate or control the risks. Employees must be consulted as part of this process.

3.1 Managing risks in the workplace

Risk management is defined by Standards Australia and Standards New Zealand as a term applied to a logical and systematic method of identifying, analysing, assessing, treating, monitoring and communicating risks associated with any activity, function or process in a way that will enable organisations to minimise losses and maximise opportunities. Risk Management is as much about identifying opportunities as avoiding or mitigating losses and is an integral part of any management process.

An employer is required to:

- Consult with employees
- Identify the hazards
- Assess the risks to the health and safety of persons arising from the hazards
- Use appropriate control measures to eliminate or control the risk.
- Monitor, evaluate and review the control measures to ensure the effectiveness of the controls.

The outcomes, decisions or actions arising out of the process should be documented, particularly if there is a moderate to high level of risk involved. Documentation may be anything from a file or diary note for a self employed person, to an action plan, risk register or handbook for a large organisation. Documentation of hazard identification, risk assessment and control methods conducted in relation to touring sets should accompany the set and be provided to the person in control of the venue prior to installation of the set in that venue. Reference can be made to AS/NZS 4360 for additional advice on steps in the risk management process. A simple guide to this process can be located in Section [6.2](#)



Consultation is an important part of this process. Refer to Section [4.3](#) for information on when employees must be consulted.

3.2 Identifying the Hazards

All employers must identify any foreseeable health or safety hazards that could cause harm to their employees and others within the workplace. “Other people” includes patrons, performers, artists, contractors and visitors to the workplace. The hazards may arise from a production or an event, the

equipment, substances or materials in use for the production or event, the environment (particularly in outdoor events or performances) and the people involved.

The hazards may be present in a venue or may be introduced into the venue with a production.

Some ways to identify hazards include:

- A walkthrough of the workplace – a simple visual check by persons experienced in identifying hazards and by employees working in the area.
- A review of the type of work being performed, the way the work is done and the work practices in use at the time.
- A review of administrative issues such as scheduling, to ensure sufficient time for:
 - consultation,
 - safe planning and implementation
 - fatigue management,
 - security issues, management of violence, harassment
 - other possible causative factors in both physical and psychological injuries.
- Looking at technical information provided by the manufacturer of equipment and/or the set builder, set components manufacturer, costume designer and manufacturer.
- Researching information regarding substances being used in a production or event to determine whether they are hazardous.
- Development of check lists that are relevant to the type of event or production.
- Examining records of incidents of similar types of event or productions or the same event or production in a different venue.
- Checking to ensure that engineering specifications have been followed and are suitable for the intended purpose.

Each hazard should be listed with information on:

- Where the hazard occurs;
- Factors that contribute to the hazard or compound it;
- Persons likely to be exposed to the hazard;
- The frequency of exposure to that hazard.

3.3 Assessing the Risks



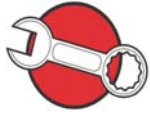
Each hazard identified has the potential to cause harm to people in the workplace. Risk assessment is a process to determine the level of risk associated with the hazard and enables a priority for action to be determined.

It involves consideration of the likelihood of an injury or illness occurring and the consequences – or the severity of any illness or injury that may occur. A combination of these two factors produces an estimated level of risk.

The assessment should include the following:

- Identification of factors that may be contributing to the risk; including
 - the work premises and the working environment; - such as raked stages, working at heights, crowd control, communication, show deck operation and fly floors, moving scenery and stage platforms, handling electrical equipment, power tools and chemicals, crowd control issues, communication methods, barriers, restricted lighting and the general working environment.
 - the capability, skill, experience, qualifications, mobility and age of the people undertaking the work;
 - the systems of work being used;
 - the number of people who might be affected eg by the collapse of a temporary stage or rigging system;
 - the range of reasonably foreseeable conditions.
- A review of health and safety information that is reasonably available from an authoritative source and is relevant to the particular hazard; including:
 - any health and safety information provided by the supplier of any plant or substance (including a person who hires or leases out the plant);
 - Material Safety Data Sheets for any substance being used;
 - the label of any substance being used in a production or event.

The outcome of a risk assessment is a prioritised list of risks which then provides a basis for planning preventative measures. There are a number of established tools to assist in assessing risks. The matrix below can be used to assist in this process or reference can be made to AS 4360 *Risk Management* where a different matrix is used. The list should be ranked from most to least severe – for example “death from falling from a lighting bridge” to “soft tissue injury from bumping into set pieces”.



ASSESSING THE RISK

For each identified hazard, a ranking should be applied according to the likelihood that it will occur and how serious the result could be. Using the following matrix, a potential outcome from a hazard could be very likely to kill or seriously injure a worker or a member of the public, would be a top level (1) and should be addressed first. If an outcome is very unlikely, in that it could happen but probably never will and if it did occur, the injured person would only require first aid treatment, it would be classified under the matrix at the lowest level (6). This hazard would be addressed after all higher risks had been eliminated or effectively controlled.

How likely is it to hurt someone?	How severely could it hurt someone			
	Kill or disable	Serious injury or long term illness	Medical treatment and several days off work	Minor first aid treatment
Very likely – could happen any time	1	1	2	3
Likely – could happen sometime	1	2	3	4
Unlikely – could happen, but rarely	2	3	4	5
Very unlikely – could happen, but probably never will	3	4	5	6

Source: Professor Jean Cross

Additional information on assessing risks can be found in WorkCover's *Code of Practice: Risk Assessment*.

3.4 Eliminate or control the risks



This step involves determining methods to eliminate the risk and if this is not possible, methods of controlling the risks. For example, eliminating the risk by discontinuing an unsafe activity (such as choreographing a performance to take place near an unprotected fall risk); eliminate a manual handling risk (such as manually moving large flats) by the use of mechanical lifting mechanisms (such as chain motors or crown lifters).

Where it is not possible to eliminate a risk the employer must minimise the risk to the lowest reasonably practical level. The occupational health and safety legislation requires employers to use a hierarchy of controls to address risks to health and safety. In the hierarchy, the higher levels of control mechanisms are preferred over the lower level control mechanisms because they provide a greater certainty of reducing risk.



HIERARCHY OF CONTROLS

The first responsibility of employers is to eliminate risk. Where this is not achievable, the employer must minimise the risk to the lowest reasonably practical level by applying control mechanisms in the following order of preference:

- Substitute the hazard causing the risk, with a hazard that causes a lower level of risk.
For example: redesigning the work process so that less hazardous equipment, material or quantities are used; modifying the rake of a stage to ensure that it is not too steep; using less hazardous or less flammable materials.
- Isolate the hazard from the person put at risk
For example: introducing an exclusion zone or restricted work area; providing caging around moving staging components; reducing emissions and noise from machinery through venting or containment barriers
- Minimise the risk by engineering means
For example: Ensuring that exposed moving parts on machinery are adequately guarded and lockout devices are fitted (eg orchestra pits); fitting counterweight stops to flying systems; use of mechanical lifting devices such as chain motors.

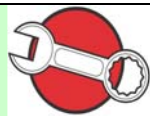
- Minimise the risk by administrative means

For example: Organising the ways tasks are to be done can sometimes reduce exposure to risks; rotation of shifts for bump in and bump out can minimise the risk of fatigue and the adverse effects of fatigue; development of standard operating procedures; provision of induction and safety training, instruction and information, adequate supervision to ensure controls are effectively implemented and to assess ongoing requirements, maintenance schedules for equipment such as flying systems, lifts and hoists and signage. (Refer to Appendix 4 (Section 10.4)

- Use personal protective equipment (PPE)

For example using safety glasses, hearing protection, safety helmets and fall arrest devices; provision of hearing protection to musicians and audience members for loud concerts; fall arrest devices for working at heights. PPE is the least preferred solution to OHS problems because it does not address the risk it merely shields the worker.

Following the risk management process provides a base for ensuring that risks associated with a production or event can be minimised. It will provide information for you to include in your production or event profile and will provide guidance on what steps to take when touring with a production. While all risks associated with a production or event should be eliminated or control mechanisms set in place at the design stage, others, such as those associated with the layout, building structure, rigging points, total load capacity of the venue need to be reassessed, preferably prior to arriving at the venue. Communication with venue operators or managers is essential in this process, as is the provision of risk information to each venue on the tour.



Controlling risks

The control measures at the top of the hierarchy provide the best outcome and should be implemented wherever possible. The measures at lower levels are less effective and require more supervision, instruction and training. Currently, in the entertainment industry, time to implement lower order controls is not always readily available, however if higher order controls cannot be implemented adequate time for implementation of administrative controls must be included in the production schedule. It is much better to ensure that risks to health and safety are eliminated or minimised at the design stage of the production or event. In some situations, a combination of controls will be needed to effectively minimise the risk.

The following are some considerations to assist in determining appropriate control mechanisms:

- the nature and complexity of the performance;
- the construction and operation of scenic elements;
- the nature and environment of the venue where the production is to take place;
- the structural capacity of the venue;
- the nature and severity of any potential injury or disease;
- information available in the industry about methods of preventing injury or disease associated with a particular hazard or risk;

- the availability and suitability of methods to prevent, remove or control causes of injuries or diseases associated with a particular hazard or risk;
- the effectiveness of the control mechanism, (or combination of the control mechanisms);
- an assessment of the control mechanisms to ensure that they do not introduce new risks into the process;
- the acceptability of the control mechanism to the employees who will be exposed to the hazard (consultation is required);
- once the residual risk has been assessed, plans should be made to ensure appropriate first-aid facilities, first aid personnel and other contingency plans are in place.

3.5 Monitoring and review

Monitoring is essential to maintain and improve health and safety performance. There are two main ways of ensuring that the methods chosen to control a particular risk are working effectively. These are:



- Consultation with employees and others who could be affected by relevant decisions;
- The elimination of incidents (or near misses) injury or illness.

The risk management process should be reapplied when:

- the residual risk has been assessed as intolerable;
- there is evidence that the risk assessment is no longer applicable;
- an injury, incident or illness occurs as a result of the hazard that the process had been deemed to address;
- there is a change in the place of work (eg a move to another venue), work practices (eg a change in the performance elements);
- there is a change to the legislative requirements relating to a particular hazard or risk;
- Whenever new information regarding work processes or products within the workplace becomes available.

3.6 Provision of Risk Identification Assessment and Control Information

In order to ensure that risks associated with any entertainment activities are identified at the design stage, especially in major productions, it is recommended that expert assistance is obtained to provide advice at the following stages of design:

- Preliminary design/conceptual stage
- Design presentation
- Manufacturing stage
- Construction stage – in the venue (Bump in)
- Production period (Technical period, rehearsal and performance)
- Disassembly – bump out and waste management

It is recognised that some sets are stored for use in later production runs. It is important that the same process is carried out on these sets and that modifications are made to minimise the risk to the end users.

An example of a risk assessment template for productions or events is included in Appendix 5 (Section 5)

4 Consultation

4.1 An Introduction to Consultation



Consultation is a basic requirement for the effective management of OHS. It acknowledges that everyone in the workplace has a role to play in ensuring workplaces are both healthy and safe. It involves management and the employees' representatives working together to achieve this aim. People doing the work are often the best source of OHS solutions.

Consultation with those people who are required to carry out work is not only an important and effective mechanism for identifying hazards and assessing risks within a workplace, it is also a legislative requirement under the Occupational Health and Safety Act. It is important that all aspects of a production or event that could affect employees' health, safety and welfare are discussed with relevant employees and their views taken into account when establishing risk control mechanisms.

WorkCover's *Code of Practice: Occupational Health and Safety Consultation* provides detailed information on how to establish workplace OHS consultative arrangements.



Employers are required to consult with employees when taking steps to assess and control workplace risks and to document consultation mechanisms. In addition, each workplace is required to establish a formal consultative process.

4.2 What is meant by Consultation?

Consultation involves sharing of relevant information about occupational health, safety and welfare with employees, employees being given the opportunity to express their views and to contribute in a timely fashion to the resolution of occupational health, safety and welfare issues at their place of work, and that the views of employees are valued and taken into account by the employer.

4.3 When must employees be consulted?

Consultation with employees must occur in the following situations:

- when risks to health and safety arising from work are assessed or when the assessment of those risks is reviewed;
- when decisions are made about the measures to be taken to eliminate or control those risks;
- when introducing or altering the procedures for monitoring those risks (including health surveillance procedures);
- when decisions are made about the adequacy of facilities for the welfare of employees;
- when changes that may affect health, safety or welfare are proposed to the premises where persons work, to the systems or methods of work or to the plant or substances used for work.

4.4 Benefits of an effective consultation mechanism.

The benefits of consultation are broad and varied. Some of the benefits include:

- improved communication between management and employees;
- timely employer awareness of problems or issues;
- more effective and timely problem-solving;
- improved employee compliance in implementing OHS controls:
- utilisation of employees' skills and knowledge;
- enhancing employee satisfaction through recognised contribution to the decision-making process (while not necessarily making the decision);
- employee understanding of the reasons for the choice of particular risk management options (allowing recognition of financial limitations and avoiding perceptions of employer irresponsibility or lack of care);
- developing interim risk management measures supported by proper management and employee behaviour;
- promoting a team, rather than a "them and us", approach to OHS.

4.5 How to manage consultation in the Entertainment Industry

All employers are required to establish a mechanism for consultation for occupational health and safety issues. Employees must be consulted on what those mechanisms will be. The legislation allows for the election of health and safety representatives and occupational health and safety committees. The consultation mechanisms must be documented and promoted within the workplace.

The transient nature of employment in the Entertainment Industry requires employers to establish consultative mechanisms that will take into account contract and casual employees. It is essential that these strategies are communicated to all company members on commencement of the production period. Venue owners and operators have a responsibility to establish ongoing consultation mechanisms; OHSW committees are an effective means for the process.

Some mechanisms for consultation for production companies and touring companies include:

- Induction on first day, outlining consultative mechanisms and legislative responsibilities.
- Information on consultation mechanisms is provided at the contracting stage.
- Regular meetings to provide an opportunity for feedback from employees.
- De briefing after production period is completed to assess the effectiveness of the consultation mechanisms and to ensure all work groups are adequately represented.

4.6 What consultation should address

The consultation process can be used to address the following types of issues:

- the identification of hazards and assessment of risks associated with set building, external event management, bumping in a production to a venue, technical runs, performances, bumping out productions and the operation of venues;
- how to select and implement control measures, to monitor their effectiveness and ensure ongoing maintenance of controls for either the length of the production run or event or the life of the venue;
- planning the introduction of new equipment, such as automated equipment, a new work method or process or the modification of existing processes;
- the introduction of the use of new substances that may be hazardous to health;
- the provision of adequate facilities for the welfare of employees;
- safe access and egress to the performance area for the performers and crew;
- emergency procedures including the provision of adequate first aid and medical services;
- administrative procedures adopted in the workplace – such as hazard and incident reporting;
- procedures for the safety of visitors to and patrons of a venue or event;
- consultative mechanisms for employees, contractors, self employed persons;
- how to use this *Employers' Guide to OHS in the Entertainment Industry* together with implementation of the provisions included in the *Safety Guidelines for the Entertainment Industry*.

5 Training



The OHS Act requires employers to provide such information, instruction, training and supervision as may be necessary to ensure the health, safety and welfare of their employees while at work.

5.1 Training requirements

Training is one of the most effective ways of making sure that workers are competent and effective in maintaining a safe working environment.

The OHS Act and Regulation set out specific requirements for training in OHS and training related record keeping that employers must comply with. For example, employers are required to provide induction training for all new employees. They must also ensure that members of OHS committees and OHS representative receive OHS consultation training.

Workers should be trained to apply systems of work and work practices that are safe and without risks to health. An employer must make sure that all employees have been adequately trained and instructed to perform their work safely before allowing any of them to work in the Entertainment Industry. Workers must be aware of any risks involved with their work and of any safety precautions that should be taken to avoid injuries or illnesses.

It is important that employers make sure that every worker who uses any plant, machinery, equipment or appliances, (such as flying systems, automated set components) engages in rigging, or erecting and dismantling screen frames is provided with adequate information and training in the operation of that item of plant.

Workers must also be provided with competent supervision while they use this equipment unless they have attained a level of competency in operating it safely without supervision. It is important to document workers' certification and accreditation, as well as any training provided to them, including the nature of the training, the date it was provided and the names of the people who have been trained.

NOTE: The various chapters of the OHS Regulation identify specific training obligations employers must meet. The table below identifies the primary requirements, and is not intended to be an exhaustive listing. Employers should refer to the Regulation itself to ensure they are familiar with all the requirements.

5.2 Training required by the OHS Regulation



Subject of Training	Who requires Training	Examples of training
<p>Induction training for new employees, covering:</p> <ul style="list-style-type: none"> • Workplace arrangements for managing OHS and reporting hazards to management • Health and safety procedures, including the use and maintenance of risk control measures • How employees can access any health and safety information that the employer is required by the OHS Regulation to provide • Any other matters relevant to the workplace, given the competence, experience and age of the employee <p><i>(OHS Reg Clause 13(1),)</i></p>	All new employees	<ul style="list-style-type: none"> • Agreed means for consultation to identify hazards and assess and eliminate or control risks. Identify to whom hazards are reported. • Systems of work, safe work procedures, communication methods, emergency and first aid responsibilities and procedures. Effective use and maintenance of personal protective equipment (PPE) • Where to find material safety data sheets, emergency procedures related to plant • Understanding of the OHS legal framework and responsibilities of individuals within it. • Incident and injury reporting • Premises layout, amenities. • A higher level of OHS training for supervisors and managers.
<p>Any information, training and instruction about risks at the place of work, necessary to ensure their safety <i>(OHS Reg, Clause 20,)</i></p>	All persons who may be exposed to a risk	<ul style="list-style-type: none"> • Identified hazards and agreed methods of control; communication requirements • Standard operating procedures developed to control risks.
<p>At a minimum, trained first aid personnel are required where more than 25 people are at a place of work. However employers must take into account the location of the workplace, number of workers, and the type of work undertaken to determine the number of trained first aid personnel required <i>(OHS Reg Clause 20)</i></p>	Relevant workers	<ul style="list-style-type: none"> • First aid certificate from an WorkCover approved first aid course • Occupational first aid certificate from an approved WorkCover course • Specific training to deal with medical emergencies that may arise in the workplace
<p>Training to oversee arrangements for evacuation, emergency procedures <i>(OHS Reg 17.3)</i></p>	<p>Relevant workers</p> <p>Emergency Control Organisation Wardens</p>	<ul style="list-style-type: none"> • Evacuation concepts and principles, Operation of emergency control organisations, • First Line Attack Fire Fighting • Evacuation procedures • Other emergency training – CRB training
<p>Training for OHS committee</p>	OHS committee members and OHS	<ul style="list-style-type: none"> • Importance of OHS consultation

Subject of Training	Who requires Training	Examples of training
members and representative, provided by a WorkCover accredited trainer or appropriate registered provider (OHS Reg Clause 31)	representatives	<ul style="list-style-type: none"> and systematically managing OHS • Consultation requirements under the OHS Act • Effective communication techniques • Requirements for OHS Management Systems • Practical application of risk management • Continuous improvement of OHS systems
Training in manual handling techniques, correct use of mechanical aids and team lifting for work activities where it is not reasonably practicable to eliminate the risks arising from manual handling OHS Reg, Clause 80	All workers whose activities expose them to any manual handling risk – in the Entertainment Industry this section relates to most workers	<ul style="list-style-type: none"> • All scenic elements, trusses, road cases, programs, tickets, cash
Training in the use of plant and supervision to the extent necessary to minimise the risks to health and safety (OHS Reg, Clause 136)	All users of plant	<ul style="list-style-type: none"> • Traps, revolves, PLC operated scenic elements, fire effects, • Forklift, Self Elevating work platforms, scaffolding • All operators should provide evidence of competency attainment.
Site specific induction training	All supervisors and workers when entering a new venue or workplace or prior to a production rehearsal.	<ul style="list-style-type: none"> • Site specific hazards • OHS Policies and Procedures • Emergency procedures
Job specific training (eg. Child care, HR, electrician)	Those persons required to carry out specific classes of work	<ul style="list-style-type: none"> • Training should be provided in accordance with National Training Standards

Traffic Management

5.3 Other Essential Training



Subject of Training	Who requires Training	Examples of training
Training in performance related Standard Operating Procedures	Performers and crew	<ul style="list-style-type: none"> • Use of equipment • Movement of set pieces and trucks • Movement of set components and props by performers

Subject of Training	Who requires Training	Examples of training
Training in the safe use and storage of hazardous substances	All workers who may use or be exposed to hazardous substance	<ul style="list-style-type: none"> • Interpretation of MSDS • Reading and following first aid advice on labels and MSDS. • Use of PPE
Working at Heights	All workers who may be required to work at heights	<ul style="list-style-type: none"> • Hazards associated with working at heights and how they are controlled • Use of fall arrest devices and fall restraint protection • Rescue arrangements
Pyrotechnicians	All persons using pyrotechnics	<ul style="list-style-type: none"> • Licence is required
Dogging and Rigging	All persons engaged in construction of entertainment industry sets	<ul style="list-style-type: none"> • All persons undertaking rigging activities must provide evidence of competency attainment
Confined spaces management	All those who supervise confined space work and those who work in confined spaces	<ul style="list-style-type: none"> • Buddy system • Atmospheric testing (where applicable) • Rescue arrangements
Prevention of Occupational Overuse Syndrome	All persons engaged in repetitive tasks, including musicians, administrative staff and dancers	<ul style="list-style-type: none"> • Importance of warm up • Positioning • Breaks
Cash handling prevention and specific procedures	All persons involved in handling cash in venues or at external events	<ul style="list-style-type: none"> • Prevention of armed holdup, reaction and post holdup procedures • Organisational policy on no resistance • Security arrangements • Emergency Procedures including armed holdup response • Critical Incident Briefing
Crowd Control	Front of House staff, Outdoor event staff	<ul style="list-style-type: none"> • Training should be provided in accordance with National Training Standards

An example of a checklist for new employees is attached at Appendix 6 (Section [10.6](#))

6 A Risk Management Approach to Hazards in the Entertainment Industry

6.1 Introduction

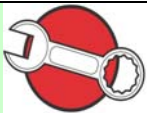
Safety in the Entertainment Industry can be affected by many factors including the nature and complexity of the event, the design and manufacture of sets, environmental factors for outdoor entertainment activities, the skill and experience of set designers, technical directors, and technicians and scheduling of performances.



This means that all activities in the entertainment industry should be considered very carefully; the people involved, their actions during performances or events, the equipment being used, the sets being designed and manufactured, the choreography of the performance.

6.2 Five Simple steps to Risk Management

These five steps can be applied to each hazard:



1 The Hazard:

Look for hazards that you could reasonably expect to result in harm in the working environment.

2 Who might be harmed?

Consider people or groups of people who could be affected by the activity.
Eg:

- Performers
- Technical and Staging Crew
- Patrons
- Members of the public
- Volunteers
- Contractors
- Cleaners.

More attention should be paid to:

- New and inexperienced workers
- Young workers eg: child performers
- Workers with disabilities
- Visitors

	<ul style="list-style-type: none"> • People working on their own
	<p>3 Is more needed to control the risk?</p> <p>Check the effectiveness of any controls that may already be in place. Consultation with employees exposed to the hazard is required. Consider the following:</p> <ul style="list-style-type: none"> • Do they meet legislative requirements • Do they meet industry standards? • Do they reduce the risk to the lowest reasonably practicable level? <p>If the answer to any of the above questions is no, in consultation with employees, determine more appropriate controls and implement them in accordance with the hierarchy of controls. (Refer Section 3.4)</p>
	<p>4 Record your findings</p> <p>The assessment must be suitable for the hazard and be extensive enough to cover all aspects. Documentation should show:</p> <ul style="list-style-type: none"> • That a proper check was made • You considered all who may be affected • You dealt with all the obvious hazards • That the precautions are reasonable and the remaining risk level is low.
	<p>5 Monitor and review</p> <p>The effectiveness of the controls should be monitored. A new assessment should be conducted if:</p> <ul style="list-style-type: none"> • The equipment or set or staging pieces are modified. • New equipment or substances are introduced into the environment • Procedures change • An incident occurs but no-one is injured • Someone is hurt

7 Managing Specific Hazards

7.1 Smoke and Vapour Effects - A Risk Management Approach

There are many different types of atmospheric effects using fogs and smokes. The most commonly used are:

Heated fogs are effects produced using fog or smoke machines that use a variety of mainly glycol based substances. There are two methods of generating fogs.

- Fog is generated by propelling a water/glycol mixture into a heating element, then forcing the fog through a nozzle to the area where it is required. The element is heated to temperature in accordance with the manufacturer's recommendations, normally in the range of 218° to 370°C. The heated solution becomes airborne as a vapour and the operator controls the amount released.
- Gas propelled systems use a non-flammable gas such as carbon dioxide or nitrogen as the propellant for mineral oils or a fluid composed of glycols and water. The mixture is propelled into a heat exchanger, which is preheated to the boiling temperature of the fluid. The expansion of the fluid forces it out of the machine as a vapour. The resultant fog contains droplets that range between 0.5 and 4 microns.
- **Cryogenic fogs** include dry ice (solid carbon dioxide), liquid nitrogen and cryogenically created water based fogs.
- **Mechanically Generated Fogs** using pressurised water, oil crackers and ultrasonic production.
 - **Oil crackers** create fog by bubbling air through a drum of high grade mineral oil. The air bubbles reaching the surface contain "cracked" oil particles normally between 1 and 50 microns in size. The oil is physically broken down in size, but not chemically altered.
The use of oil crackers can result in an oily residue building up on building surfaces, drapes and floors, not only creating a slip and fall risk but it also can create a fire risk due to the collection of dust in the oil and a build up of oily dust in air conditioning ducts. It is therefore recommended that oil crackers are not used.
 - **Pressurised water** at over 1,000 psi is sprayed through a tiny nozzle designed so that it strikes the sharp end of a small rod. The water's impact on the rod beaks the stream into tiny droplets. The droplet size can be controlled by varying the size of the nozzle and therefore the way the fog hangs in the air.
 - **Ultrasonic fog** production uses ultrasonic transducers at very high frequencies (2MHz) to throw tiny droplets of glycol and water mix. Small – 1 to 10 micron droplets are formed which drift in the air above the fluid. The droplets are moved by the use of a fan to direct them to the required area.

Ammonium chloride is also sometimes used to generate smoke on stage and at outdoor venues. The smoke is created by heating ammonium chloride and propelling it across a stage area using a fan. Air sampling studies have also shown that some decomposition of the ammonium chloride to hydrogen


chloride can occur during heating. The more heat that is applied, the more potential there is to increase the level of hydrogen chloride. The hydrogen chloride dissolves in water in the respiratory system to produce hydrochloric acid, a respiratory irritant.



MANAGEMENT OF RISKS ASSOCIATED WITH SMOKES AND VAPOURS


THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Smoke and vapour effects	<ul style="list-style-type: none"> The type of smoke or vapours required and the nature of the substance. 	<ul style="list-style-type: none"> A Material Safety Data Sheet (MSDS) is obtained, an assessment conducted in relation to exposure levels and potential adverse health effects. All personnel to be in the area at the time of smoke or fog effects are advised of the intention to use the substance, the potential effects and the control measures put in place to minimise exposure. Oil crackers are not used.
	<ul style="list-style-type: none"> Confined spaces – such as orchestra pits and under stage areas. 	<ul style="list-style-type: none"> Good ventilation is necessary in all areas when using dry ice or nitrogen fogs, but particularly in orchestra pits and under stage work areas as the vapour may flow into these areas through openings and crevices and displace oxygen in the air. If a confined area is to be occupied during the effect, a competent person is assigned to monitor the CO₂ and O₂ levels.
	<ul style="list-style-type: none"> Spill of smoke and vapour into other areas. 	<ul style="list-style-type: none"> Smokes and vapours are directed away from exits, egress paths, stairwells or emergency exit routes. Exit signs and fire response equipment is not obscured.
	<ul style="list-style-type: none"> Injuries to employees exposed to the hazardous substances. 	<ul style="list-style-type: none"> Minimise the exposure time of those concerned. Consideration is given to the activity levels of performers as inhalation of smokes and vapours will increase during periods of high physical activities, especially rigorous dance routines. Keep people away from the front of all machines as this is where concentrations are at their highest. Age of persons exposed (particularly children) is taken into consideration. History of asthma, bronchitis or other lung complications– affect susceptibility to adverse affects

THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> The use of PPE – as described in the MSDS should be used as a last resort. PPE for cryogenic fogs could include impervious gloves with good thermal insulation and a face mask or goggles. Tongs can be used.
	<ul style="list-style-type: none"> Visibility and moisture – do these increase the potential for slips and falls for crew and performers? 	<ul style="list-style-type: none"> Standard Operating Procedures are developed to address specific risks
	<ul style="list-style-type: none"> Effect on members of the public 	<ul style="list-style-type: none"> The amount of smoke and vapour effects is limited to the minimum necessary of the desired effect. Fans are used to direct smoke and vapours away from the audience. There are some people who may be sensitive to some of the substances used; therefore consideration should be given to providing advice to the audience on the use of the substances, preferably at the point of ticket sales. Warning notices place on the premises (reinforced by verbal warnings before the performance if the risk assessment indicates that this is necessary. These warnings should indicate the type of people that may be at risk).
	<ul style="list-style-type: none"> Storage 	<ul style="list-style-type: none"> Liquid nitrogen should remain stored in the container in which it was delivered. All smoke and vapour effects are stored in well-ventilated areas. All substances are retained in their original container.
	<ul style="list-style-type: none"> Access to equipment 	<ul style="list-style-type: none"> The smoke or vapour machine is located in a fixed position, adequately protected from unauthorised interference and in the control of a competent person at all times.
	<ul style="list-style-type: none"> Maintenance of equipment 	<ul style="list-style-type: none"> All machinery should be operated in accordance with the manufacturers recommendations. Only substances recommended by manufacturer to be used (using incorrect substances can result in them being burnt at an inappropriate temperature and hence become toxic or increase toxicity).

THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> • All machinery used for producing fogs and smokes are well maintained and kept clean. Reference to the operating manual will provide advice on maintenance requirements
	<ul style="list-style-type: none"> • Activation of fire detection systems 	<ul style="list-style-type: none"> • In order to minimise isolation of smoke detectors, CO detectors should be used in performance areas. (As these detectors sense the products of combustion, they do not activate with most smoke and vapour effects.) • The approval of the relevant authority is a mandatory requirement prior to the isolation of automatic fire detection or suppression systems. • Standard Operating procedures are developed and implemented to manage the isolation.
	<ul style="list-style-type: none"> • External events – effects of weather. 	<ul style="list-style-type: none"> • An assessment of the risks associated with external events is conducted and adequate controls put into place. • In particular, if crackers or other machines are used outside there is the potential to start fires, therefore appropriate assessment and controls are required.


7.2 Pyrotechnics




7.2.1 Legislative Requirements

	The WorkCover OHS Licensing Unit governs the use of Pyrotechnics. A Pyrotechnic licence is known as a “General Permit to Use Display Fireworks”. It is issued to a person for one to three years and allows an individual to hold any number of displays while the permit is valid. The permit holder must notify WorkCover prior to holding a display. The notification must be in writing and include details of the venue, time and date of every display.
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Only licensed operators are allowed to use pyrotechnics. It is also important to ensure that pyrotechnics are purchased only from licensed suppliers.

7.2.2 Managing the Risks Associated with the Use of Pyrotechnics


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Firing devices	<ul style="list-style-type: none">• Design and construction of firing boxes• Maintenance	<ul style="list-style-type: none">• The firing device should be electrically and mechanically safe and maintained in good condition.
	<ul style="list-style-type: none">• Security of firing mechanisms	<ul style="list-style-type: none">• Pyrotechnic devices should always be fired using a properly designed and constructed firing box. This may be powered from mains electricity or from a suitable battery and should be capable of being isolated by means of a key operated isolation switch.• The key should be in the possession of the operator firing the device. Electrically operated devices should be capable of being isolated from their firing supply by the complete disconnection of the supply cable.
Electrical supply	<ul style="list-style-type: none">• Voltage• Protection• Security	<ul style="list-style-type: none">• The electrical supply for firing boxes should be constant and not subject to fluctuation, eg reduced voltage through the use of dimmers.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
<p>Inappropriate storage</p> 	<ul style="list-style-type: none"> • Public access • Access for staff • Construction of storage • Compatibility with other stored items 	<ul style="list-style-type: none"> • Storage receptacles for pyrotechnic devices should be of substantial construction with a notice bearing the words – “Danger – No Smoking – No Naked Flame” displayed on the lid of the container. • All receptacles and enclosures used for storing pyrotechnics should be kept locked except when access is required. • Enclosures should have a “No Smoking” notice fixed on the external face of the door. • The person responsible for security, keeping of records and for storing the materials safety should maintain control of the keys. • A secure area for storage of pyrotechnics and firing mechanisms must be maintained at external events.
<p>Timing of effect</p>	<ul style="list-style-type: none"> • Sight lines • Access of others to firing area 	<ul style="list-style-type: none"> • Always ensure that each pyrotechnic effect can be clearly seen from the control position and the operator can clearly see that the area is clear of cast and crew.
	<ul style="list-style-type: none"> • Environmental conditions which may affect the operation (eg wind speed, rain, thunder storms). 	<ul style="list-style-type: none"> • An assessment of risk associated with the use of pyrotechnics on stage, outdoors or in confined areas should be conducted prior to any performance.
<p>Incorrect disposal</p>	<ul style="list-style-type: none"> • Legislative requirements • Age of product 	<ul style="list-style-type: none"> • Ensure that out of date and used pyrotechnics are disposed of correctly
<p>Communications</p>	<ul style="list-style-type: none"> • Emergency situations 	<ul style="list-style-type: none"> • Communications (possibility of radio and mobile phone blackouts), fire control, emergency procedures

7.3 Firearms and other weapons in productions


7.3.1 General information


Firearms and weapons in live theatre performances are usually props and do not present a risk to performers, crew or members of the public if managed correctly. However, from time to time, real weapons are used with blank ammunition. Hazards associated with firearms are accidental shooting or a malfunction of the firearm causing it to explode. Another consideration is the sound pressure level from the operation of the firearm together with when and how it is used. Sudden single sounds can have an impact on members of the audience, cast and crew if sound pressure levels are high enough to create damage. Sudden sounds can also create a “shock” reaction in some members of the audience and consideration should be given to negative impacts of this aspect, during the development of the production.



	The NSW Police Commissioner governs the use of firearms in entertainment. A Permit from the Commissioners Office, issued under the NSW Firearms Act and Regulations must be obtained for each production that incorporates the use of firearms. Unloaded weapons also fall under the provisions of the legislation and if they are to be used, they must be under the control of a licensed person.
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7.3.2 Managing the Risk associated with the use of firearms and weapons

The following points are a summary of considerations for the use of firearms and weapons during performances.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Firearms	<ul style="list-style-type: none">Firing capacity	<ul style="list-style-type: none">The firearm should be deactivated, modified or repaired only by qualified gunsmiths with the approval of the manufacturer.Live ammunition should never be used.
Firearms	<ul style="list-style-type: none">Storage	<ul style="list-style-type: none">When not in use, the firearms must be in control of the armourer or certified person and locked up with sign in and sign out procedures in place.No smoking signs must be posted wherever blank ammunition is stored.
Firearms	<ul style="list-style-type: none">Proximity to audience, crew and performers	<ul style="list-style-type: none">Scenes involving firearms and weapons should be carefully choreographed to

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>ensure that there is no risk of injury to members of the cast, crew and audience.</p> <ul style="list-style-type: none"> • All cast and crewmembers should be informed of the use of firearms and the control measures implemented for their safe use.
Firearms	<ul style="list-style-type: none"> • Knowledge and skill of performers using firearms. 	<ul style="list-style-type: none"> • All performers using firearms should be given instructions on safe handling and use of the firearm including the requirement not to palm the chamber of a firearm, even when using blanks, as shrapnel can be discharged from the weapon into the hand. • The crew and other persons should be warned immediately prior to firing of weapons.
Firearms	<ul style="list-style-type: none"> • Sound pressure levels 	<ul style="list-style-type: none"> • Sound pressure levels should be kept to the minimum level possible. • If at all possible, performers and cast members should wear hearing protection when firearms are used
Firearms	<ul style="list-style-type: none"> • Maintenance 	<ul style="list-style-type: none"> • Firearms, even props, should be treated as if they are loaded at all times. • Firearms should never be used if they are clogged with dirt or other matter. • Only the armourer or certified person should address jams and malfunctions.
Weapons	<ul style="list-style-type: none"> • Nature of the weapon • Age of weapon • Sharpness • Skill of performers • Training 	<ul style="list-style-type: none"> • All swords, knives and blades should be blunt. • Swords and blades should be inspected to ensure that they are sound and that the blade is secure in the handle and that accidental release of the blade cannot occur.
Weapons	<ul style="list-style-type: none"> • Proximity of performers, 	<ul style="list-style-type: none"> • Any performance, which includes the use of

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<p>audience and crew</p> <ul style="list-style-type: none"> Choreography of performance 	<p>swords, knives, spears, clubs or blades, should be choreographed to minimise the risk to performers and crew.</p> <ul style="list-style-type: none"> These types of weapons should never pass in the area of a person's face and the performers should be a suitable distance apart. When weapons are being used, a safety net should be in place over any orchestra pit to protect the members of the orchestra or other musicians.
<p>Weapons</p> 	<ul style="list-style-type: none"> Potential for projectiles 	<ul style="list-style-type: none"> Consideration should be given to separation distances in the event that a weapon is dropped or inadvertently propelled in the direction of another performer or member of the audience. Any person carrying any form of firearm or weapon should ensure that it is carried in such a manner as to prevent injury to passers by. Special care should be taken when walking around corners.
<p>All weapons</p>	<ul style="list-style-type: none"> Scheduling 	<ul style="list-style-type: none"> All performers and crew are provided adequate time commensurate with the complexity of the effect, to enable an appropriate level of training in the standard operating procedures and risk control measures.

7.4 Lasers

7.4.1 What are Lasers

Lasers (Light Amplification by Stimulated Emission of Radiation) produce narrow beams of ordered light rays. Laser light is normally monochromatic and can form a beam of high irradiance, which for high power lasers can be many times as bright as the sun. Lasers use wavelengths in the Infrared, visible light and sometimes in the ultraviolet range. They emit either continuous waves or pulses.

- Lasers are classed according to their power output and there are six main classes:
- Class 1 – Very low power – Safe under all conditions
- Class 2 – (Low power) – Usually emit visible radiation (400-700nm) and are reasonably safe when you assume a normal blink reflex and people do not stare into the beam.
- Class 3A – (Medium power) Reasonably safe as long as optical aids are not used to view the beam.
- Class 3B (Restricted Use) – Direct beam viewing is not permissible and can be hazardous. The power output in these lasers may be invisible and may not activate a blink reflex or the pulses may be too rapid to effect a blink reflex.
- Class 3B – emit either invisible or visible radiation and direct viewing is hazardous to the eye. With wavelengths other than those in the ultraviolet region, the pain produced by the rapid heating of the skin would lead to an aversion response sufficient to avoid burns.
- Class 4 (High Power) - Lasers in this class have sufficient power outputs to cause flesh burns as well as eye damage. Reflections can also cause damage.

7.4.2 Effects of lasers

The power of lasers needed to produce effective theatrical effects or artistic displays in large open spaces such as theatres could present a severe hazard to both employees and members of the public, as they are capable of causing biological damage within a short period of time. The organs most susceptible to damage are the eyes and the skin. It should be noted that eye safety for accidental viewing relies on human aversion responses such as blinking and that these reflexes may be affected by drugs and alcohol, thereby reducing the safety margin. The effects of lasers are as follows:

Eyes:

Retinal damage as the lens focuses the visible light wavelengths onto the retina like a magnifying glass. (Retinal burns can be produced by intensities of 1mW/cm²).

- Cataracts from long term exposure
- Other eye structures may be burnt
- Loss of blue colour vision.


Skin:



Burns

Other:

Electric shock, release of atmospheric contaminants such as carbon monoxide, ozone, lead and mercury - as a by-product of target materials when lasers are applied.

7.4.3 Managing the risks associated with the Use of Lasers

 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
<p>Lasers</p>	<p>Potential for laser emission or reflection entering the eyes</p>	<ul style="list-style-type: none"> AS/NZS 2211 – <i>Laser safety</i> (4) requires that lasers exceeding Class 1 or Class 2 are not to be used for display purposes except under carefully controlled conditions by a competent trained operator.
	<p>Exposure limits</p>	<ul style="list-style-type: none"> AS/NZS 2211 – <i>Laser safety</i>, sets out exposure limits for all Classes of lasers. Under no circumstances is any person to be exposed to radiation in excess of the relevant eye or skin Maximum Permissible Exposure Limit (MPE). The standard also sets out requirements for spectators setting an MPE for the Spectator Zone Level. (SZL), ancillary personnel and for performers.
	<p>Performers, crew and audience.</p>	<ul style="list-style-type: none"> A system for ensuring the safety of all personnel and audience members is contained in the <i>Code of Practice for Safe Use of Lasers in the Entertainment Industry (1995)</i>. This Code of Practice has been adopted in Western Australia but to date, not in other states. It provides an excellent guide to the safe management of laser shows.
	<p>Overview of safety arrangements</p>	<ul style="list-style-type: none"> The Code of Practice recommends that a laser safety officer, knowledgeable in the evaluation and control of laser hazards, should be appointed. It is the laser safety officer's task to review the precautions necessary to operate the laser safely and to advise on appropriate controls
	<p>Expert assistance</p>	<ul style="list-style-type: none"> Each laser supplier or operator of the laser display should have access to an employee or external


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>consultant who is capable of performing the duties of a laser safety officer. This person should advise on the safety aspects of any new installation, examine the equipment itself, its incorporated safety devices and systems and ensure that documentation is adequate.</p>
	<p>Emergency provisions</p>	<ul style="list-style-type: none"> Controls should include provisions for action in case of power failure, knocking of the laser itself which could result in displacement or freezing of the laser beam. A safety cut out switch should be a mandatory requirement for all lasers.
	<p>Documentation</p>	<ul style="list-style-type: none"> The documentation should contain a detailed specification of the intended scope of the display and the operator should not deviate from that specification. The documentation should be specific to the venue where the laser display is to occur and should include a drawing of the laser display area in both plan and elevation. The positions of laser sources, mirrors and target areas should be clearly marked, along with the relevant distances and dimensions. This documentation should be provided to and remain with the venue manager.
	<p>External events</p>	<ul style="list-style-type: none"> At open-air displays, adequate security is essential in order to ensure that there is no interference with the installation. Reflection from surrounding structures or buildings should also be carefully considered at outdoor venues

7.5 Strobe lighting

7.5.1 Strobe lighting effects

- Careful consideration should be given to whether to use strobe lighting during events, as they have been known to induce epileptic attacks. Flicker sensitive epilepsy is a condition that may be triggered by a number of factors, including television.
- Although this condition is rare, if an episode is triggered, there is a high risk that the flicker sensitive individual will experience a full seizure.


7.5.2 Managing the risks associated with Strobe Lighting

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Strobe lighting	Does it have to be used?	<ul style="list-style-type: none">• Assessment of the need for strobe lighting is carried out at the design stage of the event.
	Strobe frequency	<ul style="list-style-type: none">• Flicker rates are kept at or below 4 cycles per second as only 5% of the flicker sensitive population will be affected at this rate
	Multiple strobe use	<ul style="list-style-type: none">• The flicker rate above only applies to the overall output of any group of lights in direct view but where more than one strobe light is used, the flashes should be synchronised.
	Effect on crew and performers	<ul style="list-style-type: none">• Information on the use of strobes is provided to crew and performers to enable any person who has flicker sensitive epilepsy to take adequate precautions.
	Signage	<ul style="list-style-type: none">• If strobe lighting is to be used, it is recommended that a warning should be given to members of the audience, for example at the entrance to the event or the programme or preferably at the point of ticket sale, to enable adequate warning to be provided to those that may be at risk.


7.6 Naked Flame


7.6.1 What is naked flame in the Entertainment Industry?



Many entertainment organisations use naked flame as an effect during productions either in a building or at an outside venue. Naked flame in the entertainment industry includes candles, flaming torches, cigarettes, fireplaces, walls of flame, rings of fire, camp fires, matches or any other device where an unprotected flame is used for special effects.

	Naked flame is a hazard. The risks associated with the use of naked flame relative to each performance/event must be assessed and appropriate controls to eliminate the risk or minimise the hazard implemented. Appropriate approvals must also be obtained from local authorities. Compliance with the Entertainment Industry Act is also required.
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7.6.2 Managing the risks associated with the use of naked flame

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Naked Flame	<ul style="list-style-type: none">• Nature and extent of flame effect• Design of effects	<ul style="list-style-type: none">• An assessment of the risks associated with the effect should be carried out prior to the commencement of the performance. The assessment should be conducted under the same conditions as when the performance will take place.• Design of flame effects takes into consideration the proximity and effect on performers and crew.
Naked Flame	<ul style="list-style-type: none">• Fuel source	<ul style="list-style-type: none">• Approvals from the local authorities are obtained when additional fuel sources are introduced into a venue.• If LPG is used for the effect, special considerations should be given to the potential for leaks and actions to be taken in the event of a leak occurring. It should be remembered that LPG is heavier than air and will flow to low lying area. There is therefore, the potential for a build up of LPG in low lying areas creating an explosion risk.
Naked Flame	<ul style="list-style-type: none">• Provision of information	<ul style="list-style-type: none">• Information on the use of naked flame should be provided to the venue manager well before the show bumps in.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Products of Combustion	<ul style="list-style-type: none"> Nature of flame effect Ventilation Proximity of performers/crew to effect 	<ul style="list-style-type: none"> Extraction is provided where necessary. Adequate ventilation is provided to remove smoke.
Naked Flame	<ul style="list-style-type: none"> Environment for flame effect 	<ul style="list-style-type: none"> Heat proof surroundings are included in the design considerations – for example the fire places are located on fire retardant materials. Radiant heat considerations are taken into account.
Naked Flame	<ul style="list-style-type: none"> Proximity of props, set components Fire retardant properties of costumes 	<ul style="list-style-type: none"> Costumes are designed taking into consideration the flame effects. All drapes, scenery and props should be fire retarded in order to minimise the spread of any fire.
Naked Flame	<ul style="list-style-type: none"> Fire detection systems 	<ul style="list-style-type: none"> Isolation of fire detection equipment can only occur with the approval of the relevant authorities and the development of safe operating procedures for the isolation.
Naked Flame	<ul style="list-style-type: none"> Effect on performers 	<ul style="list-style-type: none"> The amount of heat radiating from flame effects can have an adverse effect on the health of performers and crew. Standard Operating Procedures take this into account by limiting the amount of exposure.
Naked Flame	<ul style="list-style-type: none"> Emergency Management 	<ul style="list-style-type: none"> A dedicated fire person should be on stage maintaining a fire watch at all times the effect is in use. An assessment of the number and type of fire extinguishers is carried out prior to the event. Appropriate fire fighting equipment, ie extinguishers and fire blankets must be located in the stage area and readily available at all times The dedicated fire person must have appropriate training in the use of fire fighting equipment and of the emergency procedures that apply in the venue.
Naked Flame	<ul style="list-style-type: none"> Scheduling 	<ul style="list-style-type: none"> All performers and crew are provided adequate time commensurate with the complexity of the

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>effect, to enable an appropriate level of training in the Standard Operating Procedures and risk control measures.</p>
<p>Naked Flame</p>	<ul style="list-style-type: none"> Outdoor use 	<ul style="list-style-type: none"> In outdoor venues, it is not always possible to replicate external conditions, therefore consideration should be given to the effects that wind and weather will have on the effect.
<p>Naked Flame</p>	<ul style="list-style-type: none"> After the effect 	<ul style="list-style-type: none"> An after show inspection should be conducted as part of the safe operating procedures to ensure that the device is fully extinguished and any threat of fire from the device is eliminated.

7.7 Ultraviolet light

7.7.1 What is Ultraviolet light?

Ultra violet light can be found in the entertainment industry in varied applications such as:

- Creating a fluorescent effect on clothing or stage scenery
- Work in the vicinity of luminaires and pyrotechnics
- Erecting and dismantling productions outdoors
- Welding

Ultra violet light is the part of the light spectrum that ranges from wavelengths of 100 – 400nm. The UV spectrum is divided into three ranges:

UVA 400-315nm

UVB 315-280nm

UVC 280-100nm

Black light is electromagnetic radiation in the part of the spectrum below visible, white light. It differs from visible light in that the UV wavelengths are too short to be seen by the human eye. The boundary between black light and visible light is a wavelength of 400nm.

Exposure limits for UV radiation depend on the wavelength and intensity of the UV source. Limiting values are expressed in terms of either the level of permissible energy exposure for an 8 hour day or the maximum time of exposure for certain levels of effective irradiance.

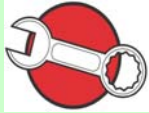

7.7.2 Effects of ultra violet exposure


Ultraviolet radiation has many effects, principally on the eyes and the skin. As well as the negative effects of UV, it can have a beneficial role in the production of Vitamin D. The detrimental effects can be acute such as Photokeratitis, Conjunctivitis, Keratoconjunctivitis (arc eye, welders flash) and Sunburn, or latent, such as opacity of the lens and cornea (although this is not substantiated by research); cataracts and pterygium (leading to loss of vision due to obstruction of lens); changes in cell growth to produce thicker skin; premature aging of skin, actinic keratosis (possibly pre-cancerous growth); basal and squamous cell carcinomas and malignant melanoma.

It is important to note the following additional risks associated with UV radiation:

- Photosensitivity or photoallergy can occur in some people if they are taking drugs such as tetracyclines, sulphonamides or oral contraceptives.
- People with skin conditions such as albinism or the auto immune disease Systemic Lupus Erythematitis can have an additional sensitivity to UV.
- UV interacts with chlorinated solvents to produce phosgene and with air to produce ozone and nitrous oxides. In enclosed spaces, these combinations can cause pulmonary oedema (fluid on the lungs).

7.7.3 Managing the risks associated with UV radiation

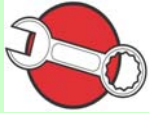
 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
UV Light	<ul style="list-style-type: none"> Does it have to be used? 	<ul style="list-style-type: none"> An assessment of the risks associated with the effect should be carried out prior to the commencement of the performance. The assessment should be conducted under the same conditions as when the performance will take place.
Outdoor work 	<ul style="list-style-type: none"> Scheduling of outdoor work 	<ul style="list-style-type: none"> Where possible, schedule work outside the hours of 1100 to 1500hrs (Daylight Saving Time). Minimise exposure time
UV from Man Made Sources	<ul style="list-style-type: none"> Intensity of light Exposure limits Duration (How much, how often, how long) 	<ul style="list-style-type: none"> -Measure the intensity of the UV exposure and regularly review. Define and mark the area where UV sources operate. Limit access to areas where UV is present. Choreograph productions to maximise the distance from the source – ie luminaires and pyrotechnics.
UV from Man Made Sources	<ul style="list-style-type: none"> Maintenance requirements Shielding 	<ul style="list-style-type: none"> Ensure that UV sources such as luminaires are well maintained to prevent leakage of UV through cracked glass etc. Enclose or shield the source as much as possible – sealed housings for luminaires.
UV from Man Made Sources	<ul style="list-style-type: none"> Damaged equipment Manufacturers specifications 	<ul style="list-style-type: none"> Do not use lamps if the outer skin is broken or if the housing filter is not in place. Ensure that reflection does not create a hazard by eliminating where ever possible. When replacing lamps or other components which could affect the radiation output, ensure that the manufacturer's recommendations are followed.
UV from Man Made Sources	<ul style="list-style-type: none"> 	<ul style="list-style-type: none"> Train employees on the effects of UV radiation, methods of limiting exposure and how to recognise early signs of melanoma, as early recognition is essential in limiting the effects of carcinoma.
UV from	<ul style="list-style-type: none"> Fumes 	<ul style="list-style-type: none"> Provide exhaust ventilation to remove by products


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
welding	<ul style="list-style-type: none"> • Eye damage • Environment • Exposure to others 	<p>from welding.</p> <ul style="list-style-type: none"> • Provide personal protective equipment for welding operations: including welding screens while welding; • Goggles or glasses matched to the wavelength and strength. Reference should be made to AS 1336 – Recommended practice for eye protection in the industrial environment and AS 1338 – Filters for eye protectors – Part 1. • Gloves • Long sleeved shirts and long trousers for welders
UV Light	<ul style="list-style-type: none"> • Provision of personal protective equipment 	<ul style="list-style-type: none"> • Use personal protective equipment including sunscreen, broad brimmed hat, sunglasses and loose fitting, long sleeved, tight weave clothing



7.8 Animals


The use of animals in the entertainment industry is not wide spread, however they are used as part of performances from time to time. As well as protecting the health and safety of workers who perform with and handle animals during the course of a production or show, care has to be taken for the welfare of the animals themselves. The Bureau of Animal Welfare has set broad guidelines for the wellbeing of animals in entertainment, including the responsibility for developing a management plan for the development and maintenance of the establishment, condition and wellbeing of the animals. Reference should be made to these guidelines should animals be incorporated into the performance.

7.8.1 Managing the Risks Associated with Animals in Performances

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Animals	<ul style="list-style-type: none"> What type of animal is to be used? 	<ul style="list-style-type: none"> Where practicable, risks should be eliminated or minimised, eg by selecting animals which present least risk, or by containing or restricting the animal.
Animals	<ul style="list-style-type: none"> What hazards does the animal present – ie what harm could it cause 	<ul style="list-style-type: none"> The types of hazards will depend on the animal in use at the time. Information from skilled animal handlers will provide information on appropriate control mechanisms.
Animals	<ul style="list-style-type: none"> What contact will there be with the animal? 	<ul style="list-style-type: none"> If there is no possibility of contact, the risk of physical injury is low. There still, however be a health risk, eg of Leptospirosis which can be contracted from surfaces contaminated with rat urine
Animals	<ul style="list-style-type: none"> By what routes can any micro-organisms be transmitted to humans, eg- hand to mouth contact, bites, scratches or through the air? 	<ul style="list-style-type: none"> All animals (dead or alive) should be regarded as possible sources of infection or infestation. This includes those kept as pets and most laboratory animals. The most dangerous in this respect are those closest to humans in the evolutionary scale, ie other primates Animals can cause infections that threaten pregnancy. In particular, pregnant women should not enter areas in which mammals have recently given birth; Obtaining performing animals from a reputable handler should reduce the risks of the animal

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>carrying disease;</p> <ul style="list-style-type: none"> When handling animals always ensure at least basic hygiene - wash afterwards, and especially before meals. Protective clothing such as gloves and overalls may be required. When bites and scratches can be expected it may be necessary to ensure that those exposed have adequate immunity to tetanus - seek advice.
Animals	<ul style="list-style-type: none"> What influence will you have on the animal? 	<ul style="list-style-type: none"> Engagement of a suitably qualified and experienced animal wrangler will minimise the risks associated with animals in performances. In order to minimise risk, animals should be handled no more than necessary.
Animals	<ul style="list-style-type: none"> How much contact will there be? 	<ul style="list-style-type: none"> Working from a distance is safer than holding an animal in your hand. Getting close to wild or large animals may require a more detailed assessment of risks
Animals	<ul style="list-style-type: none"> Who is exposed? Do any of those involved have allergies or phobias? 	<ul style="list-style-type: none"> A fit and healthy technician may be able to escape when children or elderly people cannot therefore controls must take personal characteristics into account.
Animals	<ul style="list-style-type: none"> What other animals may be present and what kind of interaction is there between them. Are they compatible? 	<ul style="list-style-type: none"> Maintenance of adequate distance between animals Provision of appropriate facilities to house, feed and transport the animals in hygienic conditions without affecting the hygiene of nearby areas.
Animals	<ul style="list-style-type: none"> What could go wrong? Could the animal escape into the studio or theatre? Could an animal bite a performer? 	<ul style="list-style-type: none"> Contingency plans to deal with any emergency should be developed in consultation with the animal handlers. Make provision for first aid. Unless they are life threatening, bites and scratches should be encouraged to bleed, washed with clean water and dressed. The casualty should then have medical attention. Where there is the possibility of exposure at a distance from medical facilities, specific antidotes may be required for hazards such as snake bites, but this option should be considered carefully.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Animals 	<ul style="list-style-type: none"> Is there an audience that could come into contact with the animal 	<ul style="list-style-type: none"> You may need to have a minimum number of people to manage an animal, but everyone else should be kept well clear. Appropriate barricades should be erected where necessary.
Animals	<ul style="list-style-type: none"> Facilities for animals 	<ul style="list-style-type: none"> Animals can be provoked to attack by disturbance or discomfort. Take advice about the animal's needs; provide food, water and suitable temperature. It may be necessary for the animal to be held in a quiet place until it is needed; Keep the length of time animals are required to a minimum. Rehearse the item last and perform it first where possible. If a retake is necessary do this straight away. A tired animal may become a greater risk; Material such as hay or straw used in venues or on stage is usually fireproofed or fire-retarded. However, this could be toxic for animals and arrangements may have to be made for untreated material with alternative fire precautions;
Animals	<ul style="list-style-type: none"> Consultation 	<ul style="list-style-type: none"> People should always be told in advance if they are to work with animals so they have an opportunity to say if they have allergies or phobias; Everyone involved should be properly briefed on risks and control measures, eg feeding arrangements or instructions not to feed, the need to avoid disturbance, and what to do in an emergency.
Animals	<ul style="list-style-type: none"> Skills and experience of performers and crew working with or in the vicinity of animals 	<ul style="list-style-type: none"> Standard operating procedures are developed to control the risks associated with various kinds of animals. All performers, crew and others in the area are

 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
		<p>trained in the procedures and emergency provisions.</p>



Additional information may be obtained from veterinary surgeons, zoos or university departments.

8 Industry Specific Considerations

8.1 Set design and manufacture

8.1.1 Design

The design of a set can have an impact on many people working in the entertainment industry. These people include:

- Persons engaged in manufacturing the set;
- Persons engaged in loading and transporting the set;
- Persons engaged in building the set on stage (bumping in);
- Persons engaged in a performance – the artists or performers;
- Technical crew operating a variety of set components during the performance;
- Lighting and sound technicians
- Persons engaged in dismantling the set (bumping out);
- Patrons of the performance for which the set was built;

It is important that designers and manufacturers consider all these groups when considering the design of the set and how it will operate during a performance.


There are specific legal requirements that apply to designers and manufacturers of sets. Particular reference should be made to the provisions for Plant (Section [9.1](#))


8.2 Set Design factors





Risks associated with the use of a set must be assessed at the design stage and eliminated where possible or adequately controlled using the hierarchy of controls. The following are some factors which should be considered in the design of sets:




 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Structural integrity of set pieces/work platforms/lighting and sound rigs	<ul style="list-style-type: none"> • Stage loadings • Loads for hung set pieces • Barrel loads 	<ul style="list-style-type: none"> • Engineering specifications are obtained for all load bearing structures • Engineering certification is provided following installation

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<ul style="list-style-type: none"> • Dynamic loads • Total hung weight • Flying people 	<ul style="list-style-type: none"> • Specifications ensure that the structure is fit for purpose. • Point loads /total load for building are determined and taken into account. • Load limits are included on relevant set pieces (eg balconies, 2 or more story sets, raked stages, show decks)
Working at heights	<ul style="list-style-type: none"> • Activities to be undertaken during bump in and bump out • Choreography of performance 	<ul style="list-style-type: none"> • Set component at heights have adequate guarding • If there is a risk of fall and no guarding is possible, fall restraints are provided or other safe procedures are put in place. These can include: <ul style="list-style-type: none"> ○ Choreography of performance away from edges ○ Highlighting of edges with luminescent tape ○ LED placement at edge of fall risk ○ Provision of fall mats • Provisions for harnesses are designed into costumes • Standard operating procedures are developed, staff trained and procedures implemented.
Floor surfaces	<ul style="list-style-type: none"> • Potential for slips, trips 	<ul style="list-style-type: none"> • Performance floor surfaces are designed to minimise the risk of injury
Confined spaces	<ul style="list-style-type: none"> • Can it be eliminated • Do people have to enter the space? 	<ul style="list-style-type: none"> • Confined spaces are eliminated at the design stage and if this is not possible, no person is required to enter them.
Plant and Equipment	<ul style="list-style-type: none"> • Movement of set 	<ul style="list-style-type: none"> • Potential for crushing and entrapment


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<p>pieces</p> <ul style="list-style-type: none"> Weight and movement of trucks 	<p>assessed and controlled</p> <ul style="list-style-type: none"> Standard Operating Procedures developed for all moving set pieces Engineering certification is obtained for major plant items.
<p>Fire and Explosion</p>	<ul style="list-style-type: none"> Supply of fuel for fire effects Proximity of combustible materials Smoke from effects 	<ul style="list-style-type: none"> Gas or other fuel supply does not exceed fire load of building Extraction of products of combustion is provided where necessary Standard Operating Procedures are developed for operation of fire effects All external set pieces flame retarded All cloths in the near vicinity of flame effects are flame retarded. Heat deflection shields are used where necessary.
<p>Water</p>	<ul style="list-style-type: none"> Biological hazards Bacterial hazards Slips, trips and falls Temperature 	<ul style="list-style-type: none"> Water effects are designed to ensure that risks are eliminated Water effects are designed to minimise the potential for bacterial and biological contamination – especially for long running productions. Treatment methodologies are determined as part of the set design. Standard Operating procedures are developed for water effects Choreography of performance takes spills and leaks into consideration
<p>Access and Egress</p>	<ul style="list-style-type: none"> Access to work platforms in a performance 	<ul style="list-style-type: none"> Stairs are built into the set design Handrails are provided in accordance with the requirements of Australian Standard AS 1657.
<p>Lifts and Traps</p>	<ul style="list-style-type: none"> Structural integrity 	<ul style="list-style-type: none"> Design of lifts and traps takes into

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<ul style="list-style-type: none"> • Loads 	<p>account the potential for falls,</p> <ul style="list-style-type: none"> • Load limits are included on all lifts and traps • Protection from falls is provided • Protection from entrapment is provided • Provision of information including registration and certification of design of plant (Refer to Section 9.1 – Plant) • Ease of use • Standard operating procedures are developed, staff trained and procedures implemented.
Manual Handling	<ul style="list-style-type: none"> • Designers and manufacturers should be aware of the enormous range of physical dimensions, for example height and reach, to be found in the workforce and the implications of this for handling set components during bump in and bump outs. • The use and design of props. 	<ul style="list-style-type: none"> • Minimise the lifting and lowering forces exerted; • Reduce pushing, pulling, carrying and holding; • Consider the size, shape, surface characteristics, stability and weight of set components; • Consider where ever possible, designing special purpose trolleys and lifting/ carrying handles appropriate for the set piece. • Transport arrangements are taken into consideration. <p>Refer to Section 9.2 Manual Handling</p>
Access and Egress	<ul style="list-style-type: none"> • Number of performers and crew at any one time • Performance design • Size and facilities of venue(s) • Lighting states 	<ul style="list-style-type: none"> • Sets are designed to enable fast safe access and egress in the event of an emergency • Lighting is adequate to enable safe access and egress
Choice of Material	<ul style="list-style-type: none"> • Structural integrity • Loadings 	<ul style="list-style-type: none"> • Materials are kept as light as possible

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<ul style="list-style-type: none"> • Slip/Trip potential • Ease of construction • Fit for purpose • Fumes • Fire retardant properties 	<p>while maintaining structural integrity</p> <ul style="list-style-type: none"> • Quick fastening methods are provided for set components • Sharp edges or burrs are removed at the set manufacture stage


Reference should also be made to Section 4 Consultation, Section 9.1 – Plant, Section 9.2 Manual Handling, Section 9.3, Working at Heights 9.4 Falling Objects, Section 7.1, Smoke and Vapour effects, Section 7.2 Pyrotechnics

8.3 A Risk Management Approach to Set, Props and Costume Manufacture

	<p>Manufacture of production components involves the use of woodwork, painting, welding, plastic moulding, the use of fibreglass, electrical work, Exposure to hazardous substances, fabrics and chemicals, the use of a variety of plant and equipment and construction work.</p>
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Potential risks to the health and safety of employees engaged in these processes include:

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
<p>WOODWORKING AND METAL WORKING MACHINERY.</p> <ul style="list-style-type: none"> • Injuries from improperly guarded woodworking and metal working machinery. Reference can be made to <i>AS 4024 Machinery Safety</i>, which sets out the provisions for safeguarding of machinery and to Section 9.1 <p>The primary hazards associated with machinery are:</p> <ul style="list-style-type: none"> ➤ Contact or entanglement; ➤ Trapping between machinery and fixed structures ➤ Contact or entanglement with material or fixed structures; ➤ Being struck by ejected parts; ➤ Release of potential energy; ➤ Friction and abrasion; ➤ Crushing or drawing in; ➤ Contact with electricity; ➤ Noise; ➤ Radiation (possibly); ➤ Release of substances <p>Some wood dusts can cause allergic reactions of the skin and the respiratory tract</p>	<ul style="list-style-type: none"> • The environment where sets are being manufactured. • The nature, size and weight of components being machined • The operation and maintenance of the plant and equipment • The skills knowledge and experience of the operators • Access and egress provisions • Emergency procedures 	<ul style="list-style-type: none"> • Wood and metal working equipment should be effectively guarded, inspected and maintained. • Specifications for purchase of new machinery should include a provision for the machine to be “quiet”. • Protection against inadvertent operation is in place. • Standard operating procedures are developed and implemented for each typed of machine. • All machinery is regularly tested to ensure that it is electrically safe. • Only adequately trained and competent persons are permitted to use the machines. • Airborne concentrations of wood dusts should be minimised with local dust extraction. Where it is not reasonably practicable to do this, appropriate personal protection should be provided for all workers in the area.
<p>PAINTING</p>	<ul style="list-style-type: none"> • Exposure limits for 	



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EXAMPLES OF CONTROL MEASURES

Painting of sets and props can also introduce risks into the workplace. Many pigments used in paints are toxic. In powder form they produce dust which can easily be inhaled during the mixing process. Two pot paint mixes contain resin systems that may cause sensitisation, acute asthma and dermatitis. Propellants in aerosol cans can also be hazardous to health

each type (found in the MSDS)

- The number of people who may be exposed including visitors
- How often and for how long they may be exposed
- Licensing provisions for flammable liquids

Reference should be made to Section **9.7** – Hazardous Substances for general control mechanisms relating to hazardous substances.

SPRAY PAINTING

Spray painting operations present two major hazards:

1. Health hazards from skin contact or inhalation of spray materials
2. Fire and explosion from highly combustible materials.

Other hazards include:

- Electrical risks – in relation to wet areas
- Plant – potential malfunction of equipment
- Manual Handling
- Noise

- The number of people who may be exposed
- How often and for how long they may be exposed
- The nature of the object being sprayed
- The effectiveness of the spray booth or extraction system
- The type of spray painting to be done (eg Compressed air/electrostatic.)


- Reference is made to the MSDS for the substance being sprayed.
 - Standard operating procedures are developed and implemented.
 - Personal Protective Equipment appropriate to the task is selected, used and maintained.
 - All substances are labelled including those that have been decanted from the original container.
 - Consideration is given to appropriate storage. Refer AS 1940 (Section **9.14**)
 - Standard Operating Procedures include provisions for clean up and maintenance
- Reference should be made to *WorkCover's Guide to Spray Painting*


WELDING

Welding, soldering and thermal metal cutting are often performed during a set build. Fumes from welding gases are a potential risk if inhaled. If chlorinated hydrocarbons are used in the same area as welding, phosgene can be created by oxidation breakdown in the welding arc. Phosgene is an extremely toxic gas. As well as the risk of welding fume fever from welding gases, there is a UV radiation risk. Welding can cause a “flash” burn of the cornea and severe burning on unprotected skin. (Refer also to Section **7.7** - Special Effects – UV).

- Welding environment
 - Fire risks (combustible materials,
 - Proximity to flammable liquids)
 - Other people in the area
- Re-cycled drums and tanks – knowledge of prior contents.
- Fumes
- Maintenance
- Electric shock

- Hazard Identification and Risk Assessment process is carried out prior to commencing welding.
- Personal protective equipment including gloves, welding masks and footwear.
- Use of a welding blanket to minimise the risk of fire.
- Adequate housekeeping (removal of combustible materials -
- Standard Operating Procedures including provisions for Hot Work
- Adequate ventilation
- Use of welding screens to protect others who may be in the area
- Servicing and installation by competent

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>persons.</p> <p>Reference can be made to the <i>Welding Technology Institute of Australia Technical Note 7 – Health and Safety in Welding</i></p>
<p>POLYSTYRENE FOAM</p> <p>Polystyrene foam is widely used for prop making being cut and shaped by prop makers. Hot wire cutters are usually used to sculpture the desired shape, however Stanley knives and saws can also be used. Styrene is the base used to manufacture polystyrene. It is a neurotoxin, which impairs the central and peripheral nervous systems causing effects ranging from tiredness, drowsiness and memory impairment from mild exposure to motor coordination and narcosis from high level exposures. Styrene oxide is listed on the <i>NOHSC List of designated hazardous substances</i> as a possible human carcinogen and there is some research which has indicated that styrene may be a mutagen. Polystyrene dust may cause irritation to the upper respiratory tract.</p> <p>Polystyrene foam is combustible. It contains a flame retardant to inhibit accidental ignition from small fire sources. However once ignited, it will burn emitting a dense black smoke. The products of combustion are toxic, although manufacturers state that the products of combustion are no more acutely toxic than the combustion products of other common building materials, such as wood.</p> <p>As the cutting and shaping of polystyrene usually is only a small part of a worker's duties, the potential for adverse effects of exposure to styrene in this industry are minimised. It should be noted however, that long term exposure (3.2 to 10 years) to small quantities of styrene (1 to 10 parts per million) has resulted in a wide spectrum of adverse health effects. These include neurotoxic, haematological, cytogenetic and carcinogenic effects. Considering all these factors, the</p>	<ul style="list-style-type: none"> • Does it have to be used? • Type of foam to be used. • Environment in which it is to be used • Fire risks • Method of cutting foam • Ventilation • Transport and Storage • Deterioration over time 	<ul style="list-style-type: none"> • Reference is made to the MSDS for the product • Flame retarded polystyrene is used. • Adequate ventilation is used in the manufacturing area. • Use of PPE – in accordance with the MSDS when hot wire cutting polystyrene foam • Adequate storage arrangements are made. • Emergency provisions cover the possibility of toxic products of combustion.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
<p>exposure of workers in the entertainment industry to polystyrene dusts, together with the flammability of the product, would be the primary risks.</p>		
<p>FIBREGLASS</p> <p>Fibreglass is also used extensively in the building of scenery and props. A Synthetic Mineral Fibre (SMF), like asbestos and other mineral fibres, it can also produce irritations of the skin, eyes and upper respiratory tract. Individuals have a wide range of tolerance to these primary irritations. They have no long term consequences to health, however irritations can become secondarily infected.</p> <p>Synthetic mineral fibres have a larger fibre diameter than asbestos fibres and as such, they are not generally respirable and they do not stay in the air for too long. The major concern with SMF is to the skin, eye and upper respiratory tract where irritation is the main outcome, especially in high concentrations. However, the NOHSC recommends the following warning label for fibreglass: "Possible risk of Irreversible Damage".</p>	<ul style="list-style-type: none"> • Does it have to be used? • Spread of fibres • Storage provisions • Deterioration with age • Working environment 	<ul style="list-style-type: none"> • Standard Operating Procedures are developed for the use of fibreglass. • The fibreglass process is designed to minimise the amount of fibres in the air this can include: <ul style="list-style-type: none"> ○ Exhaust ventilation ○ Appropriate containment of waste materials ○ The provision of PPE ○ Provision of adequate washing facilities. • Reference is made to the MSDS for the product. • Training for staff on the standard operating procedures is provided to all persons working with Fibreglass. • Storage of sets containing fibreglass components is arranged to minimise risks of damage and release of fibres. • Reference can be made to <i>Approved Codes of Practice on Synthetic Mineral Fibres</i> and to Section 9.7 of these guidelines - Hazardous Substances
<p>OTHER CONSIDERATIONS</p> <p>WORKING AT HEIGHTS</p> <p>FALLING OBJECTS</p> <p>ACCESS AND EGRESS</p> <p>CONFINED SPACES</p>		<ul style="list-style-type: none"> • The designer and manufacturer must consider the operation of the set in theatres and other entertainment venues. Potential for falls from heights by cast members or crew should be addressed at this stage.

8.4 Truck Loading and Unloading



Employers are required to assess the risks associated with loading and unloading of trucks used for transportation of entertainment equipment.

Local council and the Road Traffic Act requirements must also be taken into consideration.

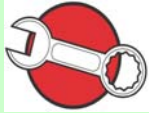
As principal contractors, employers may also be responsible for ensuring the truck is both suitable for the purpose and well maintained.


8.4.1 Introduction




Due to the nature of the industry, sets and equipment are transported throughout Australia, being loaded into and unloaded from trucks, numerous times during the tour. Unsafe loading or unloading of trucks can result in employees engaged to conduct the work, sustaining a variety of injuries and there is the potential for them to be serious or even fatal. It is essential that all employees engaged to either load or unload trucks are provided with sufficient training and supervision for the duration of the work. As with all types of hazards, it is essential that the employer or contractor is aware of the potential risks and takes steps to minimise those risks.

8.4.2 Managing the risks associated with truck loading


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Loading trucks	<ul style="list-style-type: none">• Size of load	<ul style="list-style-type: none">• Planning is an essential part of determining the best arrangement for sets and equipment for transport. Transport requirements are included at the set design stage and take into consideration size, weight and manoeuvrability.• Consideration should be given to the destination of the scenery, whether it is travelling to another venue or to a store as this could affect the order of the load.• It is essential that the right type of truck is obtained for transport of scenery and equipment. Consultation with scenery manufacturers will assist in the selection of the most appropriate form of transport.


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> • Ensure that the correct equipment is supplied and used – for example gates, ropes and clips • A manifest of the load including estimated weights should be completed before departure of the truck. • A packing diagram should be sketched, describing the placement of the load. • Both the manifest and the packing diagram should accompany the set and equipment and be provided to the manager of the next venue, prior to commencement of a bump in.
Loading trucks	<ul style="list-style-type: none"> • Destination and type of venue or store 	<ul style="list-style-type: none"> • Discussions should be held with the manager of the next venue to identify any particular concerns or requirements specific to that venue
Loading trucks	<ul style="list-style-type: none"> • Traffic management 	<ul style="list-style-type: none"> • A traffic management plan in consultation with the local council should be developed if there is any possibility of interference with normal traffic flow. • Personal protective equipment in the form of high visibility vests should be worn by employees working in the near vicinity of traffic • All persons who are directing traffic should be competent and have attended a traffic management course and hold a licence where required.
Loading trucks	<ul style="list-style-type: none"> • Stability of load 	<ul style="list-style-type: none"> • Ensure that the truck is parked on even ground to ensure stability of scenic elements in the truck. • In most cases, theatre scenery is loaded upright against gates or van walls and not stacked flat. • All scenery and equipment should be properly secured once in the truck • If loading flats, care must be taken to ensure that each individual flat is secure and cannot slip
Loading trucks	<ul style="list-style-type: none"> • Manual handling loads 	<ul style="list-style-type: none"> • It is essential to ensure that there is sufficient appropriate manual handling equipment available for loading of the truck. • All staff engaged in loading trucks are trained in manual handling including team lifts.
Loading trucks	<ul style="list-style-type: none"> • Competency requirements 	<ul style="list-style-type: none"> • If using a fork lift truck to load some of the equipment, ensure that only licensed personnel are


 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
		<p>operating the fork truck.</p>

8.4.3 Managing the risks associated with truck unloading



 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
<p>Access to venue for unload</p>	<ul style="list-style-type: none"> • Capacity of loading docks or facilities • Weather conditions 	<ul style="list-style-type: none"> • Planning is an important part of preparing to unload scenery and equipment from trucks. • Contact is made with the venue and/or local authorities well before the production period. • The manifest and packing diagram should be checked prior to commencing, in order to determine the most appropriate order for the unload. • Scheduling of transport takes into account the nature of the loading areas and local environment, the size and nature of the load, weather protection available at loading area, extremes of weather (eg arrival time for early mornings in hot weather). • Storage requirements are assessed and planned well prior to the production period. • Scheduling takes into account local activities. • Sufficient staff are made available to limit exposure to extremes of weather. • Temporary covers are provided against rain and sunshine. • Load capacity of docks is known and is not exceeded during the unloading process.
<p>Fumigation products</p>	<ul style="list-style-type: none"> • Country of origin of set 	<ul style="list-style-type: none"> • Information on fumigants used is obtained from the set manufacturer/importer.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> • Standard operating procedures are implemented to manage any residual fumes following fumigation. • Prior to opening truck doors, all staff are made aware of the potential for residual fumes from fumigation. • Contents of trucks are aired prior to unloading (where necessary). • PPE is provided where required.
Unloading of truck	<ul style="list-style-type: none"> • Number and location of workers available for unload • Skill and experience of workers • Level of supervision 	<ul style="list-style-type: none"> • Employees working in the near vicinity of traffic should wear personal protective equipment in the form of high visibility vests. • Adequate lifting equipment that is suitable for the purpose is readily available. • Workers have attended manual handling training. • Adequate rest breaks are provided in the schedule
Unloading of truck	<ul style="list-style-type: none"> • Management of traffic • Pedestrian access 	<ul style="list-style-type: none"> • All persons who are directing traffic should be competent and have attended a traffic management course and hold a licence where required. • A traffic management plan, which takes into account pedestrian and vehicular traffic into account, is available to venue staff. • Appropriate signage is readily available and suitable for the purpose. • Alternate access is provided if necessary. • Local authority assistance is obtained if necessary. (eg police)
Unloading of truck	<ul style="list-style-type: none"> • Size of truck • Nature of load • Method of securing the load • Lighting of dock and truck 	<ul style="list-style-type: none"> • Extreme care should be taken when opening trailer doors, removing tarpaulins, releasing side curtains, removing gates and releasing ropes/load binders as the load may have shifted during transit thereby creating a potential risk. • If sections of the load are secured to the side wall of a van or to side gates, ensure that the section is made safe when removing ropes or load binders. • Scheduling takes into account time of day for arrivals • Adequate lighting in accordance with Australian

 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
		<p>Standards is provided.</p> <ul style="list-style-type: none"> • Temporary lighting is made available, especially at outdoor events. • Appropriate maintenance of facilities at the venue to ensure lighting levels are acceptable. • Reports of unserviceable equipment are acted on promptly.
<p>Unloading of truck</p>	<ul style="list-style-type: none"> • Nature of unloading area/dock 	<ul style="list-style-type: none"> • Prior to unloading a truck, the load bias must be checked. • The truck should be parked on even ground or if this is not possible, it should follow the bias of the load.
<p>Unloading of truck</p>	<ul style="list-style-type: none"> • Nature of the load • Availability of manual handling equipment • Provision for temporary storage 	<ul style="list-style-type: none"> • Ensure that there is sufficient manual handling equipment of an appropriate type available for the unload. • When unloading general scenery and equipment or road crates by hand, ensure that there are sufficient people trained in manual handling and team lifting techniques to manage the load. • Adequate supervision should be supplied. • The size of the load is taken into account and provisions made for safe temporary storage.
<p>Unloading of truck</p>	<ul style="list-style-type: none"> • Size of set and components • Size of venue 	<ul style="list-style-type: none"> • When unloading trucks into a venue, consideration must be given to placement of scenic elements, road crates or equipment to enable: <ul style="list-style-type: none"> ➤ easy accessibility for staging crew; ➤ adequate manoeuvring room; ➤ maintenance of clearance around <ul style="list-style-type: none"> ▪ fire fighting equipment such as hose reels and extinguishers; ▪ emergency exits

8.5 Staging





Employers have a responsibility to identify hazards associated with the installation of sets at venues. Following an assessment of the risks, adequate control mechanisms to eliminate or minimise the risk must be implemented.







This phase of entertainment activities is one where consistent and rigorous application of the legislative requirements in relation to risk is essential. It is also essential to ensure that adequate consultation with employees takes place. This section addresses “bump in” or “load in”, operation of scenery and equipment during performances and the “bump out” or “load out.”



The following hazard profile addresses some of the typical hazards in this process. Reference should also be made to other sections of the guidelines for more specific information relating to these hazards.




Planning of performances or events is essential to ensure that risks are addressed in the design stage and if this is not possible during the planning phase. Attention to risks at this phase will have a dramatic positive effect on the safety, health and welfare of all persons associated with productions and events.



 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
<p>Inadequate training</p>	<ul style="list-style-type: none"> • Size and complexity of production/event. • Consultation with employees • Type and complexity of equipment 	<ul style="list-style-type: none"> • Ensure appropriate qualifications prior to engagement of all staff • Induction training on the production is provided for venue staff. • Induction training for performance staff and crew is provided as soon as possible after commencement at the venue. • Scheduling takes into account the need for adequate training of all parties involved with the production. • Risk identification assessment and control information is provided to the venue well before commencement of the production. • Adequate supervision by trained experienced staff is provided. • Appropriate equipment requirements are communicated to venue so that staff trained in the use of the equipment can be available at the venue.
<p>Working at heights</p> 	<ul style="list-style-type: none"> • Refer to Sections 9.3 and 9.4 	<ul style="list-style-type: none"> • Consideration of information provided by set designers and manufacturers prior to scheduling. • Provision for adequate scaffolding elevated work platforms and appropriate guarding. • Elevated work platforms are regularly maintained in accordance with the manufacturer's recommendations and legislative requirements. • Prior to use, daily checks are performed on SEWPs and results entered into the log book. • Outriggers are used where provided on elevated work platforms. • Certified and/or trained staff are available at the venue. • Safety harnesses are made available where adequate guarding is not practicable. • Staff are trained in the use of fall protection equipment and rescue arrangements. • Staff trained in safe procedures for restraining


 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
		<p>objects whilst working overhead.</p> <ul style="list-style-type: none"> • Sufficient hard hats are made available and are worn when overhead work is being performed. • Erection of external equipment takes into consideration the potential for slips and falls in wet weather, wind conditions and dehydration in hot weather.
<p>Power sources and Electricity</p> 	<ul style="list-style-type: none"> • Nature and complexity of event • External conditions • Capabilities of staff • Access and egress 	<ul style="list-style-type: none"> • Designers and manufacturers take into consideration the safety of crew and performers when designing electrical components of sets. • Consultation with venue well before production period. • Standard operating procedures are developed, staff trained and implemented for all electrical equipment. • Appropriate distribution boards are provided for outdoor events. • Risk identification, assessment and control measures are determined prior to production period. • Qualified electricians are available for power set up. • Adequate knowledge of circuits is assured. • Power surge and RCD protection is provided. • Portable RCDs are used on all moveable electrical equipment that is not protected at the distribution board. • All electrical equipment is correctly labelled. • Electrical testing of all relevant equipment is conducted at regular intervals in venues and prior to hire and lease of any electrical equipment in accordance with the provisions of AS3760. • Scheduling takes into account the requirements to have all electrical equipment tested and tagged. • Competent staff are available to test and tag equipment on arrival at the venue. • All staff are made aware of the requirement to


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>visually inspect and take out of service and report any unsafe equipment.</p> <ul style="list-style-type: none"> • All leads on stage are taped down or covered to prevent trip hazards. • All electrical equipment brought in from overseas complies with Australian Standards.
Insufficient time	<ul style="list-style-type: none"> • Nature and complexity of production and equipment used • Length of production period • Environmental conditions 	<ul style="list-style-type: none"> • Scheduling takes into account the complexity of the performance. • Scheduling takes into account travel time for touring companies and adequate rest breaks prior to commencing work at new venue. • Scheduling allows sufficient time for venue staff to be trained in the Standard Operating Procedures for the production/event. • Scheduling takes into account the number of staff available. • Staffing levels take into account the complexity of the production/event. • Resources are determined in consultation with venue and company management.
Traffic management 	<ul style="list-style-type: none"> • Traffic flows • Nature of venue • Pedestrian access • Access and egress requirements 	<ul style="list-style-type: none"> • Contact with local authorities is made well before the production period. • Early contact is made with the venue to determine venue access requirements. • Transport companies are advised well before the production/event period to ensure that adequate numbers of the correct type of vehicle are available. • A traffic management plan is developed in consultation with local authorities and the venue. • Staff are trained in traffic management. • Adequate signage to comply with the Road Traffic Act is available. • Qualified drivers are available.
Lack of adequate access to stage	<ul style="list-style-type: none"> • Size and complexity of production/event and the venue 	<ul style="list-style-type: none"> • Local authorities are contacted to determine access arrangements for external events. • All staff trained on the importance of maintaining


 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
<p>areas</p> 	<ul style="list-style-type: none"> Refer to Section 9.14 	<p>access and egress and also not restricting access to essential building safety and fire fighting equipment.</p> <ul style="list-style-type: none"> Adequate storage for set components is readily available at the venue. Clear access routes are made available for staff moving equipment and scenery into the venue. Sufficient access is made available for manual handling equipment. The Emergency Control Organisation (ECO) or other experienced auditor conducts regular audits. Adequate barriers are available to delineate access paths for external events. Access and egress signage is appropriate and sufficient in number to cater for emergencies including power failure and general blackout.
<p>Set design</p>	<ul style="list-style-type: none"> Experience and knowledge of set designers and manufacturers Refer to Section 8.1 and 8.2 	<ul style="list-style-type: none"> The designer is made aware of legal obligations well before the set design is approved. A design presentation is scheduled well before the set manufacture commences. Additional hazards identified at this stage are then assessed and appropriate controls implemented in the set build. Set designers and manufacturers provide risk identification, assessment and control information to the company as soon as possible and prior to commencing at the venue..
<p>Large, awkward or heavy set components or props</p>	<ul style="list-style-type: none"> Refer to Section 9.2 	<ul style="list-style-type: none"> Manual handling requirements are considered at the set design stage. Additional lifting equipment is made available where required (eg chain motors, trolleys, hoists, fork trucks, lifters etc).
<p>Special Effects (Pyrotechnics, Naked Flame, Lasers etc</p>	<ul style="list-style-type: none"> Nature and complexity of production or event Nature and complexity of venue Environmental conditions 	<ul style="list-style-type: none"> Effect designers take into account the type of venue. Risk identification assessment and control process is completed well before the production period. Appropriate equipment is selected for the performance/effect (eg appropriate laser class).

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<ul style="list-style-type: none"> Refer to Sections 7 and 9.14 	<ul style="list-style-type: none"> Safety Management Plans are available for consideration by venues and/or local authorities well before the production period. Qualified pyrotechnicians are available for the display. Scheduling takes into account the need for testing of all special effects in the venue. Set manufacturers are advised of the type of special effects and the design takes this into account (eg fire retardant materials used in sets and costumes). Adequate and appropriate storage for pyrotechnics and other special effects is available at the venue. The need for isolation of fire detection systems is assessed well before the production period. Approval is obtained from local authorities for isolation of fire detection systems. Standard Operating Procedures are developed in consultation with staff, staff are trained and procedures implemented. Staff are trained in Emergency Procedures specific to the special effects.
Hazardous substances (including gas cylinders) 	<ul style="list-style-type: none"> Refer to Section 9.7 	<ul style="list-style-type: none"> Set designers take into account the need for hazardous substance use. Hazards are identified, risks assessed and control mechanisms planned. Early contact is made with the venue to determine storage capabilities. Expert assistance (eg occupational hygienist) is available to provide advice on exposure to hazardous substances. Contact is made with local authorities to determine storage and disposal requirements. External storage of cylinders and hazardous substances is secure from public access.
Emergencies	<ul style="list-style-type: none"> Nature and complexity of production/event 	<ul style="list-style-type: none"> Designers take into account the venue type and available facilities.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<ul style="list-style-type: none"> • Size of event • Refer Sections 9.10 and 9.14 	<ul style="list-style-type: none"> • An assessment of the numbers and type of emergency personnel (including first aid) is made well prior to the production period. • Information on the nature of the performance and previous experience is provided to the venue well before the production period. • Security information and history of previous productions is provided to the venue or company management well prior to the production period. • Security arrangements are then assessed and arranged. • Ticketing takes into account the size and nature of the venue (particularly at external events).
Inappropriate rigging	<ul style="list-style-type: none"> • Total load of venue, grid or external structure. • Barrel loads • Truss loads 	<ul style="list-style-type: none"> • Qualified riggers construct all rigging. • Load limits are indicated on all structures. • All rigging meets safe working load limits (SWL). • Weights are shown on all flown elements. • All equipment used for rigging complies with applicable Australian Standards.
Sharp edges	<ul style="list-style-type: none"> • Manual handling of scenery equipment and props • Proximity of performers, audience members to the edge 	<ul style="list-style-type: none"> • All sharp edges should be eliminated at the design stage. Consideration is given to set elements, props, lantern parts and other accessories. • For existing sets and production elements, a review should be conducted to identify any sharp edges, risks then assessed and control mechanisms implemented. • If it is not practicable to address sharp edges, information is provided in the risk identification, assessment and control documentation provided to the venue. • Personal protective equipment (eg gloves) is provided for construction of scenic elements.
Slippery surfaces	<ul style="list-style-type: none"> • Possibility of special effects causing slippery surfaces (eg water, smoke and vapour effects, sand etc) 	<ul style="list-style-type: none"> • The design of the production takes into account the potential for special effects to create slippery surfaces. • Standard operating procedures are developed to address spills and other causative factors.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Awkward postures	<ul style="list-style-type: none"> Position of crewmembers who manually operate scenic elements. 	<ul style="list-style-type: none"> Design of production eliminates the need for crew to sustain awkward positions when operating set components. Ergonomic considerations are factored into set design.
Exposed penetrations in floors/ unprotected openings or edges	<ul style="list-style-type: none"> Lighting states Types of fall protection Access and egress 	<ul style="list-style-type: none"> Design of sets eliminates the risk of falls through exposed penetrations. Where this is not possible appropriate controls are part of design process. Standard operating procedures are developed for all pits, traps and other penetrations in floors. Barriers are placed at least 1 metre from stage edges during bump in and bump out situations. During bump in all penetrations are fenced off and access restricted. Stage and trap edges are highlighted with tape or LEDs. Pit nets are installed over orchestra pits
Platforms and stairs in sets	<ul style="list-style-type: none"> Number of performers using platforms or stairs during performances Potential for slips and falls Structural integrity Load limits Floor surfaces Access and egress Emergency Procedures 	<ul style="list-style-type: none"> Platforms and stairs comply with the Australian Standards provisions. Handrails are provided on all stairs. Stair nosings are highlighted. Guardrails are provided on all platforms. Construction materials are appropriate for use. Engineering certification is provided for all structures. Platforms do not compromise fire detection and suppression systems. Lighting is sufficient to enable safe access and egress. Stair nosings are highlighted, especially in diminished lighting conditions.
Inappropriate engineering of sets or set components	<ul style="list-style-type: none"> Potential for collapse Load bearing capacity 	<ul style="list-style-type: none"> All scenic elements that are load bearing, carry people or have the potential to fall have engineering certification. All applicable parts of scenery have SWLs (clearly visible).
Lack of	<ul style="list-style-type: none"> Number and positioning of 	<ul style="list-style-type: none"> Lighting is provided to enable adequate access and

 <p>THE HAZARD</p>	<p>FACTORS TO CONSIDER IN ASSESSING RISK</p>	<p>EXAMPLES OF CONTROL MEASURES</p>
<p>adequate lighting</p>	<p>performers and crew during reduced lighting states</p> <ul style="list-style-type: none"> • Access and egress 	<p>egress.</p> <ul style="list-style-type: none"> • Task lighting is provided for operation of critical cues. • Scheduling takes into account the requirement for adequate technical time to safely manage cues in reduced lighting states. • Total blackouts are discouraged. Where a blackout is an integral or critical part of a performance, standard operating procedures must be developed to ensure the safety of all persons.
<p>Flying Systems</p>	<ul style="list-style-type: none"> • Automated or manual • Frequency of use • Skill and experience levels of staff • Breakdown procedures • Emergency procedures for specific risks (eg Cradle runs) • Method of securing of weights in cradles • Nature of objects being flown (including people) 	<ul style="list-style-type: none"> • Flying systems are regularly maintained. • Load limits of system are not exceeded. • Standard operating procedures are developed for all flying systems in consultation with staff, staff trained and procedures implemented. • Safe working loads are shown on flying system components. • A lifting register for all cables and ropes is maintained. • Only skilled experienced staff should operate flying systems. • Safety checks including checks of braking systems are conducted prior to use. • Safety lines with appropriate ratings in accordance with Australian Standards are used for flying people. • All relevant staff are trained in emergency procedures.
<p>Automation</p>	<ul style="list-style-type: none"> • Refer to Section 9.1 	<ul style="list-style-type: none"> • Design of automated set components takes into account installation and dismantling at the venue and choreography of the performance. • Moving parts are adequately guarded. • Interlocks are provided where access is required. • Limits are set according to manufacturer's instructions. • Engineering certification is provided.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> • Standard operating procedures are developed in consultation with staff, staff are trained and the procedures implemented. • Scheduling takes into account the requirement for adequate training time on all automated equipment.
Scenery	<ul style="list-style-type: none"> • Size of scenic elements • Construction materials • Stability of scenic elements during construction. • Securing methods 	<ul style="list-style-type: none"> • Design and manufacture of scenic elements takes into account construction methodologies. • Trained, experienced staff are engaged to construct scenic elements. • Large flats are adequately secured during construction. • Temporary storage facilities are available for large scenic elements. • Trip hazards are minimised as much as possible during construction.
Wardrobe	<ul style="list-style-type: none"> • Number of performers and costume changes. • Nature of venue – distance to stage • Manual handling requirements • Substances used • Ergonomic set up of working environment. <p>Refer to Section 9.7 (Hazardous Substances) and 9.2 (Manual Handling)</p>	<ul style="list-style-type: none"> • Wardrobe area is designed to provide optimum ergonomic considerations such as seating, bench heights, height of sewing tables, and height of ironing boards. • Laundering is scheduled to allow appropriate rest breaks, especially for large productions. • Steamers are appropriately maintained, electrically tested and RCD protected. • Appropriate cleaning materials are used to minimise the risk of exposure to hazardous substances. • Adequate extraction is provided where necessary. • Shoe maintenance occurs in well ventilated area.
Wigs and Makeup	<ul style="list-style-type: none"> • Exposure to biological hazards • Size and complexity of costume design. <p>Refer to Section 9.7 (Hazardous Substances)</p>	<ul style="list-style-type: none"> • Wigs and make up area is designed to allow optimum ergonomic considerations – such as seating, bench heights. • Each performer maintains their own make up kit.

8.6 Performers on Stage

8.6.1 Introduction



Employers of any performer on stage have an obligation to take steps to eliminate or where that is not possible minimise the risks to the health and safety of performers. This responsibility extends to a person whom has control of premises used by people as a place of work, who must also ensure that the premises are safe and without risks to health. The duty extends to matters over which that person has control.



Performers on stage can include musicians backstage, onstage and in orchestra pits, singers (both backstage and onstage), dancers, actors of varying types, opera singers, circus performers and extras – to name a few.


Musicians can be members of bands or orchestral musicians. A study by the British Association of Performing Arts Medicine recently revealed that 50 to 60 % of orchestral players had at one time or another experienced an acute physical problem connected with their playing. Ballet and dance in the Entertainment Industry can take many forms, from a full production of Swan Lake to a single artist performing a jazz routine.


The health and safety issues for circus performers are largely similar to those for other performers, but performances can involve a greater degree of risk. As a result circus performers tend to have a higher awareness of their own safety and are trained in the maintenance and use of the equipment used in their act. Employee consultation with circus performers is particularly important.





As in the prevention of all injuries, elimination of risks to health and safety is critical in the design phase of a production. The following information provides a guide to minimising the risk associated with performers. Other risks that performers may be subjected to are covered in other sections of these guidelines.


8.6.2 Managing the Risks Associated with Performers on Stage


 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
Repetitive movements	<ul style="list-style-type: none"> • Scheduling • Technique • Static Muscle Loads • Warm ups and cool downs • Other activities of performers including computer use • Quality and set up of instruments • Environmental factors • Early recognition • Adequate treatment • Posture 	<ul style="list-style-type: none"> • Performances and Rehearsals are scheduled to take into account adequate rest breaks. • Rigorous concert or performance schedules are minimised and sudden increases in playing time for musicians are avoided. • For musicians, reduction of force, determination of postures that keeps joints in the middle of their range of motion, use of large muscle groups, reduced use of fixed tensed positions. • The musician in accordance with individual requirements sets up instruments correctly. • Appropriate stands or supports or provided where there is the potential for static muscle load eg trombone support. • Adjustment period is provided for new instruments • Environmental conditions are addressed (temperature, humidity) – the optimum level is between 21-24°C and 50% +/- 10% humidity. In setting the temperature consideration is given to the amount of physical activity undertaken by the performers. • All performers are trained in early recognition of problems and are encouraged to take personal responsibility for their health and fitness. • Information and training on appropriate stretch exercises is provided. • Ergonomically designed seating is provided

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		to suit individual requirements.
Manual handling	<ul style="list-style-type: none"> • Shape and weight of instrument or equipment 	<ul style="list-style-type: none"> • Use of carts or trolleys to transport large or awkward instruments and equipment. • Straps or stands are used where possible
Noise	<ul style="list-style-type: none"> • Transfer of noise • Positioning of instruments • Amplification 	<ul style="list-style-type: none"> • Seating for musicians is arranged to provide adequate separation. • An appropriate sized space for the number of musicians and type of performance. • Sound pressure particularly from brass and timpani sections is deflected away from orchestral musicians' and other performers' hearing zone. • Acoustic shields or barriers are used where possible. Placement of shields or barriers takes reflection of sound waves into consideration. • Sound baffles are used for individual musicians. • Scheduling takes into account the noise exposure. • Hearing protection is made available for musicians and crew members. • Amplification levels are used at appropriate levels (refer Section 9.8 Noise) • Speakers are positioned to minimise impact on musicians. • Monitoring of hearing levels is undertaken at regular intervals.
Lighting	<ul style="list-style-type: none"> • Direction of lights • Visibility of music 	<ul style="list-style-type: none"> • Music stands are designed to optimise the position and direction of lighting bulbs.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
	<ul style="list-style-type: none"> • Eye Strain 	<ul style="list-style-type: none"> • Light bulbs on music stands provide optimum lighting conditions. • Lighting effects are directed away from musicians in orchestra pits
Orchestra Pits	<ul style="list-style-type: none"> • Set up of performance space • Number and type of musicians in pit • Number and placement of electrical cords 	<ul style="list-style-type: none"> • Adequate clearance is provided to ensure access and egress in the event of an emergency. • Electrical cords are either hard wired or taped down.
Costumes	<ul style="list-style-type: none"> • Weight • Trips, slips falls • Floor surfaces • Jewellery • Environmental conditions • Flying 	<ul style="list-style-type: none"> • Costumes are designed to be as light as possible • Costumes that incorporate masks are designed to ensure that visibility is not compromised • Shoes are appropriate for type of floor surface • Temperature and humidity is appropriate for level of activity • All jewellery is anchored • Provisions for harnesses are designed into costumes (where relevant)
Props	<ul style="list-style-type: none"> • Weight • Ease of use • Structural integrity • Resilience of construction 	<ul style="list-style-type: none"> • Prevention of injuries and elimination of risks to health and safety are taken into account in the design phase of each production. • Flammability of props is taken into account at the design stage. • Trolleys, castors or other mechanisms are included at the design stage to minimise the risk of manual handling injuries during performances. • Where props are used to support the weight

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<p>of people, a competent person or engineer certifies the structural integrity.</p> <ul style="list-style-type: none"> • Props are appropriately made and finished. • Casting takes into account the physical capabilities of each individual performer. • Productions are adequately rehearsed. • Training in appropriate manual handling techniques is provided where necessary • Physical warm ups and cool downs are undertaken where appropriate • Physical conditioning programs are undertaken where appropriate
Floors	<ul style="list-style-type: none"> • Type of floor – dependant on nature of dance • Slips 	<ul style="list-style-type: none"> • Sprung floors are designed into new theatres, rehearsal rooms and studios • Tarkett is well maintained • All floor surfaces are kept clean and free of any equipment or substances that could contribute to fall risks. Standard operating procedures are written to support this control measure.
Overuse	<ul style="list-style-type: none"> • Nature of performance • Scheduling 	<ul style="list-style-type: none"> • Warm up and warm down are a normal part of the process.
Lighting	<ul style="list-style-type: none"> • Direction and intensity of lighting • The need for blackouts • Contrast • Lights shining into eyes • Electrical connections 	<ul style="list-style-type: none"> • Lighting is designed to provide adequate access and egress for performers (including the use of work lights) • Length of time for blackouts to be kept to an absolute minimum • Emergency lighting is not compromised by the blackout • Procedures are developed and implemented to safely manage all blackouts. • All lights are electrically tested and tagged.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> • RCD protection is provided on all lighting circuits.
Vocal overuse	<ul style="list-style-type: none"> • Technique • Scheduling • Environment • Airborne contaminants • Travel • Geographic location • Out of work activities • Medications • Food containing drying agents (eg Caffeine) 	<ul style="list-style-type: none"> • Vocal maintenance training and exercises, under professional guidance, are undertaken regularly. • Vocal warm ups are undertaken before performances. • Rehearsals and performances are scheduled to take into account adequate rest breaks. Temperature and humidity are appropriate for the nature of the performance. • Casting takes into account the stage of development of the individual voice. • Sound levels from instruments are set to minimise the risk of voice overuse.
Stage work	<ul style="list-style-type: none"> • Trips, slips, falls • Stairs • Raked stages • Direction, choreography • Fights 	<ul style="list-style-type: none"> • Prevention of injuries and elimination of risks to health and safety are taken into account in the design phase of each production. • Directors, choreographers, fight choreographers, etc have an understanding of the health and safety implications of their work. • Stage blocking and business are risk assessed at the beginning of the rehearsal phase of a production. Casting takes into account the physical capabilities of each individual performer. • Productions are adequately rehearsed. • Training in appropriate manual handling techniques is provided where necessary. • Physical warm ups and cool downs are undertaken where appropriate.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING RISK	EXAMPLES OF CONTROL MEASURES
		<ul style="list-style-type: none"> • Physical conditioning programs are undertaken where appropriate. • Appropriate floors are used for the movement/dancing required. • All floor surfaces are kept well maintained, clean and free of any substances that could contribute to fall risks. Standard operating procedures are written to support this control measure.

8.7 Outdoor Events

8.7.1 Introduction

Most of the information pertaining to outdoor events is provided throughout the body of this guide. Specific references relating to outdoor events are indicated by the symbol:



However, there are a number of issues that relate directly to outdoor events that need to be considered by employers.

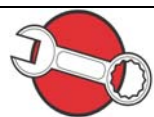
8.7.2 Lightning

8.7.2.1 Introduction

The Centre for Sports Medicine Research and Education, University of Melbourne reports that each year many people are killed or injured due to misinformation and inappropriate behaviour during thunderstorms. There is the potential, where large crowds gather to participate in, staff or attend an outdoor event, to experience mass casualties as a result of a lightning strike at any one venue.

8.7.2.2 A Risk Management Approach to managing the potential for lightning strikes

(Adapted from Recommendations for lightning protection in Sport
The Centre for Sports Medicine Research and Education, University of Melbourne)



General lightning safety recommendations

- Develop a proactive approach that includes monitoring the local weather from the day before activity until the event has finished and the crowd has dispersed
 - Establish a specific chain of command. This includes choosing a designated weather-watcher and specifying the method of warning the people at risk.
 - Define and list safe structures and locations
 - Define the criteria for both suspension and resumption of activity.
-
- **Safe structures**
 - Large/substantial building (with electric and telephone wiring and plumbing to provide a safe pathway for the current to the ground).
 - Fully enclosed metal vehicle (acts as a Faraday cage and guides the lightning current around the passengers).
 - Buses are an excellent shelter and can be strategically placed around a venue to protect larger

groups of people.
<ul style="list-style-type: none"> ▪ Unsafe locations and situations ▪ Open field. ▪ Close vicinity to the tallest structure in an area (eg, tree, communication tower, light pole). ▪ Small structures such as rain/picnic shelters, tents, interchange bench. ▪ Indoor and outdoor swimming pools. ▪ Use of indoor phones. ▪ Umbrellas, stilts, props, or any other object that increases an individual's height
<ul style="list-style-type: none"> ▪ The "30/30" rule ▪ A flash-to-bang count of 30 seconds indicates that lightning is 10 km away. This is associated with significant risk that the next strike could be at the observer's location. Thus, activity should be suspended and people moved to designated safe shelters. ▪ Wait 30 minutes after the last lightning or thunder before recommencing the event

8.7.3 Venue and site design

An important aspect of providing safe and entertaining events is to ensure that the selection of the site is appropriate for the nature, the duration, the location of the performance. Consideration must also be given to the geography and local environment of the selected site.



An assessment of the risks associated with the site must be conducted and should take into account the following factors:

- Ground conditions
- Slopes
- Entry and exit routes – suitable for general and emergency use.
- Weather conditions – wind, thunderstorms, rain, lightning, heat etc
- Location and accessibility of services
- Council approvals where necessary
- Proposed occupant capacity
- Artist and audience profiles
- Whether alcohol is to be sold
- Movement of the audience between different stages, entertainment, catering and amenities areas.
- Services – accessible and safe
- Electrical installations, nature, size and location.

8.7.4 Temporary structures

Most outdoor events require the provision of temporary structures such as stages, seating, fencing and marquees. All such structures must be constructed to minimise the risk of collapse and should be designed to suit the specific intended purpose. Any such structure must comply with relevant legal requirements and appropriate Australian Standards.

Reference can be made to Chapter 8 of “*The Event Safety Guide – A guide to health, safety and welfare at music and similar events*” published by the British Health and Safety Executive.

8.7.5 Risk Management Plan

A Risk Management Plan should be developed for all outdoor events. In addition to the plan, an audit of the site prior to opening the area to employees and then to members of the public should be conducted to ensure that all foreseeable risks have been adequately addressed.

8.8 Ticketing and Cash Handling

8.8.1 Ticketing

There are many types of ticketing arrangements for both internal and external events. Each of these can have an impact on the safety and health of workers in the industry and the members of the public attending performances. Poor ticketing and admission policies can result in members of the public becoming frustrated, thereby increasing the potential for crowd rage and verbal abuse of workers at the venue.



As in all entertainment industry activities, the hazards associated with different types of ticketing must be identified for each event, the risks assessed and appropriate control mechanisms implemented. The following information provides some assistance in this process.





- Where it is expected that the event will achieve full capacity or near to full capacity, advance ticket sales only should be sold.
- Tickets for seats that offer restricted views should be advised at the point of sale and the buyer forewarned. Seats with severely restricted views or very poor acoustics should not be sold.
- If there is more than one entry point, colour coding corresponding to the different entry points may assist in crowd movement and emergency management.
- All sections of the venue, aisles, rows and individual seats should be clearly identified.
- Procedures for general admission should be developed incorporating queuing and safe entry provisions.
- If cash sales are available at the venue, admission prices should be set at a round figure to minimise the amount of small change to be kept at the ticketing booth and also increase the speed for the sale of tickets thereby decreasing the potential for patron frustration.
- Temporary sales outlets (or ticket booths) must be designed and installed in accordance with legislative provisions. Emergency, security, ergonomic, electrical and cash handling (refer to Section **8.8.2**) provisions must be included. Consultation with those who are to work in the area must take place when designing the workplace.
- If all tickets have been sold in advance or they are not available on site, every effort should be made to advise members of the public. This information can be included in media releases and by signage at all approaches to the venue.
- If there is a requirement for venue staff to tear tickets, the design of the ticket should take ease of tearing into account.

- Some events may not be appropriate for children, particularly those under 5 years of age as they, dependant on the nature of the event, may be crushed or trampled in large crowds. Should young children be excluded from events, this fact should be advised via the media and the point of sale.
- If children are to be admitted to the venue, specific arrangements should be in place to ensure their safety in the event of an emergency.

8.8.2 *Cash handling*

Violence can have a dramatic impact on the health safety and welfare of workers. Employers have the primary responsibility to manage the potential for violence at the workplace. One of the major causes of violence can be the presence of cash in working environments.

	<p>Hazards associated with cash handling must be identified, risks assessed and appropriate control mechanisms implemented. Most importantly, minimising the risk of armed hold up should be a priority at both internal and external venues. The following information provides some assistance in this area.</p>
	<p>Consultation with employees engaged in cash handling is essential</p>

8.8.2.1 Armed Hold-Up Prevention



Armed hold-ups can not always be prevented. However adopting some practical measures can reduce any serious threat.

- Limit the amount of cash that is kept on the premises or at an event
- More frequent deposits to banks or secure holding units will assist.
- Money should be kept out of sight
- Money should never be counted in view of the public
- Advertising the fact that that minimum cash is kept on site.
- Cash registers should be located in a position that will not permit anyone to see the cash holdings, but will create high visibility by passers by.
- Vary times and routes for banking when transporting cash. Try to ensure that your banking procedures do not become routine.
- An open uncluttered environment providing a clear, well lit view of the ticketing or money areas from outside, is a deterrent to armed robbers.

- Counters should be designed so that there is no opportunity for access behind the counter by the customer and so that there is as much distance between customers and workers as possible. Deep counters with raised floors behind the counter make it difficult for an offender to assault staff and also make it easier for staff to observe the customer areas.
- Installation of convex mirrors at elevated advantage points in the area can assist.
- Placement of height markers on exit doors to assist in robber identification.
- Video surveillance cameras.
- No employee should be required to work alone in cash handling areas. At least two employees should be present at all times.

8.8.2.2 During a hold up.

- A clear policy of non resistance to hold-ups should be incorporated into policies and procedures on this subject.
- All employees working with cash should attend training programs designed to ensure that they are aware of specific procedures to minimise the potential for harm to themselves and others during an armed hold up. Assistance can be obtained from the WorkCover Authority or the local police.

8.8.2.3 After a Hold up

All employers have a legal obligation to look after the health and welfare of their employees. This obligation includes providing expert assistance if any employee has been exposed to a traumatic incident. Where any employee has witnessed or been involved in an armed hold-up they may have experienced a state of uncontrollable fear where their life has been threatened. For this reason they must undergo professional counselling immediately. Critical incident counselling should form part of an overall policy on armed hold-ups.

Additional information regarding Cash handling and Violence in the Workplace can be obtained from WorkCover's Code of Practice *Cash in Transit* and WorkCover's Guide *Violence in the Workplace*.

8.9 Administrative staff

Administrative staff in the Entertainment Industry can be subjected to many hazards. It is important when developing policies and procedures to include provisions for administrative staff.



Some particular areas for consideration are:

- Hours of work: Refer Section **9.5** Fatigue
- Manual handling – Refer Section **9.2**
- Bullying and Harassment Refer Section **9.12**
- Cash Handling – Refer Section **8.8.2**
- Emergency Procedures – Refer Section **9.14**
- Amenities – Refer Section **9.13**

8.10 Front of House (FOH)

8.10.1 General OHS provisions for FOH staff

OHS considerations for the Front of House or Stewarding (at external events) are often seen as low risk, however employers are required to identify reasonably foreseeable hazards, assess the risks and implement appropriate control mechanisms. Many of the more common risks in this area are covered in other sections of these Guidelines. Some of these could be:



- Hours of work: Refer Section [9.5](#) Fatigue
- Manual handling – Refer Section [9.2](#)
- Bullying and Harassment Refer Section [9.12](#)
- Cash Handling – Refer Section [8.8.2](#)
- Noise – Refer Section [9.8](#)
- Emergency Procedures – Refer Section [9.14](#)

8.10.2 Other specific FOH Requirements

8.10.2.1 Crowd management



One of the main responsibilities of Front of House or Stewarding is management of the audience. They are also there to assist in the provision of fast and efficient evacuation in the event of an emergency.

Security companies can be contracted to provide a high standard of crowd management at external events. Consultation should occur between all relevant parties to ensure that sufficient numbers of staff are provided for the nature and size of the event.



An assessment of the risks should include the following:

- Previous experience of audience behaviour with the artists
- The nature of the venue, presence of obstacles, size of the compound
- Type of stage and other barriers
- Provision of seating
- Access to stage and backstage areas

- Potential for members of the public to climb on rooves, scaffolds or platforms or other temporary structures
- Provision of alcohol
- Possibility of other forms of drug abuse
- Weather conditions
- Potential for falls – either on the same level or from heights, uneven or slippery flooring or steps
- Expectation of conflict
- Likelihood of opposing groups attending the event
- Contribution of emergency services
- Access and egress arrangements – dead ends, locked gates
- Restrictions on parking or camping facilities
- Provision of adequate signage
- Pedestrian flow – convergence of routes
- Public amenities
- Control of glass and missiles
- Queuing arrangements
- Control of animals
- Post event activities

Reference can be made to the Health and Safety Executive publication: *Crowd Safety Risk Assessment Methodology* which is available from the HSE Website. www.hse.gov.uk

8.11 Children involved in Entertainment Activities

Children are a large part of the entertainment industry, performing in many different genres of entertainment. Long hours and the potential for inadequate facilities and supervision can compound the risk of injury, emotional and psychological abuse. The demands of arduous schedules and the general demands of a production often overlook the needs of children. Children themselves can be caught up in the excitement of performing and do not have the experience to properly look after their own interests, they are naturally inquisitive, easily distracted, energetic and have limited or no appreciation of danger. Consideration must also be given to the level of experience of child performers – either amateur where a greater duty of care is required or professional.




Due to the characteristics, age and inexperience of children who perform in entertainment venues, the employer and the venue manager owe a greater general duty of care to them than to others engaged in the industry. Under Occupational Health and Safety legislation, the employer is legally bound to provide for the health and safety of all employees, including children.

The Children (Care and Protection) (Child Employment) Amendment Act of 1992 in NSW and the related Children's Employment in New South Wales Code of Practice sets out rigorous criteria for the employment of children, including the requirement for obtaining a licence to employ children.

NSW legislation requires employers to undertake a "Working with Children Check" for anyone who will have the supervision or care of the children.

General Provisions under the legislation

- ❖ Age appropriate recreational materials and rest facilities.
- ❖ Adequate supervision by trained personnel at all times; (the legislation sets out minimum numbers of supervisors per number of children, dependent on the age of the child.)
- ❖ Ten minutes rest per hour with rest breaks counting as time worked
- ❖ One hour break every four hours.
- ❖ Appropriate food, taking into account the child's age, taste and background.
- ❖ Protection from extremes of climate.
- ❖ No child is to be subjected to any form of corporal punishment, social isolation, immobilisation or any behaviour likely to humiliate or frighten the child.
- ❖ The child is able to make contact with his or her parents at all times.
- ❖ An adult is to accompany the child when travelling to and from work.
- ❖ Appropriate accommodation when a child is required to travel.
- ❖ Privacy for children when dressing.
- ❖ At least one of the child's parents is to be notified when the child becomes ill or is injured.
- ❖ Non exposure to scenes that are likely to cause distress and
- ❖ Children are not to be required to perform naked or with a naked person.

	<p>There is also a responsibility for risk management in relation to children as follows:</p>
<p>Hazard Identification</p>	<p>Identify situations where children and young people may be at the workplace and what specific hazards they may be exposed to for the duration of the casting, costume fitting, promotions, rehearsal and performance periods.</p>
<p>Risk Assessment</p>	<p>Determine which hazards are more likely to cause injury to harm to the health of children and young people and the consequences of exposure to the hazards.</p> <p>Aspects to take into account in assessing the risks:</p> <ul style="list-style-type: none"> • The size of the person and level of physical maturity. • Their general behaviour and psychological maturity. • The amount of work experience and training. • Their ability to make mature judgements about their own safety and the safety of others. • Their ability to cope with unexpected, stressful situations. • Special factors that mean children and young workers are more likely to be affected than adults in the same situation.. • Conflicting schedules, external pressures (family or school). • Any medical information relating to the care of the child. • The provision of appropriately trained chaperones.
<p>Risk Control</p>	<p>Take appropriate action to eliminate or minimise the risk taking into account the abilities and experience of the children involved. The emphasis in risk control should be on establishing a safe system of work rather than recommending personal protective equipment.</p> <ul style="list-style-type: none"> • Standard operating procedures for supervision of children are developed in order to ensure that all parties are aware of their responsibilities in relation to the care of children. • Company managers obtain information to ensure that they are aware of any specific medical conditions that could be affected by the child's work. • Police checks are conducted for all staff who work with children or are in charge of children. • A system is in place to ensure that child custody provisions are not compromised.


Reference can also be made to the AEIA *Juvenile Code of Practice*

9 Other Considerations for the provision of a safe working environment

9.1 Plant

The OHS Regulation sets out many legal obligations regarding the design, manufacture registration and use of plant. Plant under the Regulation also includes equipment and appliances.

The following are some of the requirements relating to plant. You will need to refer to the Regulation to obtain all of the information required.

	Employers are required to identify hazards, assess the risks and implement control mechanisms to reduce the risk to the lowest practicable level.
Employers	<p>Employers are required to take reasonable care to identify hazards arising from: the physical working environment (including the potential for any one or more of the following):</p> <ul style="list-style-type: none"> ❖ electrocution, ❖ drowning, ❖ amputation; ❖ fire or explosion, ❖ people slipping, tripping or falling, ❖ contact with moving or stationary objects, ❖ exposure to noise, heat, cold, vibration, radiation, static electricity or a contaminated atmosphere, ❖ the presence of a confined space, and ❖ the potential for workplace violence.
	Employers must also ensure that risks associated with the installation, erection, commissioning, use and dismantling of the plant are assessed and that appropriate control mechanisms are in place to minimise the risk. The manufacturer must take into account the instructions and information provided by the designer and manufacturer of the plant.
Designers	Some plant requires design registration, item registration or both before it can be used in NSW.
	<p>Designers also have an obligation to:</p> <ul style="list-style-type: none"> • evaluate the likelihood of an injury or illness occurring and the likely severity of any injury or illness that may occur, <p>Designers must take into account the following aspects:</p> <ul style="list-style-type: none"> • the impact of the plant on the work environment in which it is designed to operate,

	<ul style="list-style-type: none"> • the range of environmental and operational conditions in which the plant is intended to be manufactured, transported, installed and used, • the ergonomic needs of persons who may install, erect, use or dismantle the plant, • the need for safe access and egress for persons who install, erect, use or dismantle the plant, • other specific risk control measures (including as to manual handling, hazardous substances and the working environment). • A designer must design plant so that risks associated with the manufacture, installation, erection, commissioning, use, repair, dismantling, storage and disposal of the plant are eliminated or, if this is not reasonably practicable, are controlled. • The designer is also required to provide information regarding the plant that is necessary to enable the other persons to fulfil their responsibilities with respect to the following: <ul style="list-style-type: none"> (a) identifying hazards, (b) assessing risks arising from these hazards, (c) eliminating or controlling those risks, (d) providing information. • The designer must also ensure that the person who manufactures the plant is provided with sufficient information to enable the plant to be manufactured in accordance with the design specifications and, as far as practicable, with information relating to the following: <ul style="list-style-type: none"> (a) the purpose for which the plant is designed, (b) testing or inspections to be carried out on the plant, (c) installation, commissioning, operation, maintenance, inspection, cleaning, transport, storage and, if the plant is capable of being dismantled, dismantling of the plant, (d) systems of work necessary for the safe use of the plant, (e) knowledge, training or skill necessary for persons undertaking inspection and testing of the plant, (f) emergency procedures.
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Manufacturers	A manufacturer of plant is also required to identify the hazards associated with plant in a similar way that designers do. They also have to assess the risks and implement control measures to minimise the risk of injury to all persons who may come in contact with the item of plant. The manufacturer must obtain and provide information relating to the plant that will enable the risks to be controlled.
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Some other things you should know about plant – remember that plant also refers to equipment and appliances. In the Entertainment Industry this can include flying systems, revolves, mechanically operated set pieces and hoists, hairdryers, irons, steamers to name a few.



In order to make sure that plant and equipment does not pose a risk when in use and when left unattended, special consideration should be given to the following:



- ❖ All plant must be used for the purpose for which it was designed and within its rated capacity.
- ❖ All safety features, guarding, warning devices, interlocks and emergency stops must be used as intended, tested regularly and not be made inoperative.
- ❖ Plant must be maintained in a safe condition. A competent person must carry out inspection, testing and repairs and records of inspection, testing and repairs must be kept.
- ❖ Employers should make sure that all plant is inspected and serviced regularly, and that it is carefully checked daily before it is used. Logbooks and inspection check lists should be kept.
- ❖ All persons using the plant must be trained to use the plant safely. In the Entertainment Industry, employees are required to use a variety of plant. Plant associated with performances, as opposed to plant used within a venue can change with each production. Adequate technical time should be set aside for adequate training of technical staff in the operation of the specific items of plant.
- ❖ No person should use any plant while they are under the influence of alcohol or other drugs (including some prescription drugs) that might affect their ability to operate the plant safely.
- ❖ All available information relating to the plant must be provided to plant users, installers, testers and any other persons who may be exposed to a risk from the plant or equipment.
- ❖ Information on the hazard identification, assessment of risks and the control methods must be provided to the users of plant.

9.2 Manual Handling

9.2.1 Introduction to Manual Handling in the Industry

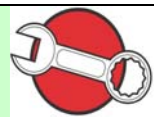
Manual handling is any activity that requires a person to use bodily force in order to lift, lower, push, pull, carry or in some other way move, hold or restrain any person, animal or thing.

In the Entertainment Industry, manual handling is one of the most frequent causes of injury as the majority of tasks include an element of manual handling. The major differences between manual handling in the entertainment industry and those in most other industries, is that new risks are introduced with every set that comes into a venue. Due to the fact that a set may have come in from overseas or from storage, it is quite common for sets to arrive at a venue where there is little or no knowledge of the composition of the set.

Employers are required to identify, assess and eliminate or control the risks associated with manual handling.



Specific requirements regarding manual handling are set out in Part 4.4 of the OHS Regulation. More general guidance on identifying, assessing and eliminating or controlling manual handling risks can be found in the National Code of Practice published by the NOHSC.



General Principles for Manual Handling in the Entertainment Industry

Design and manufacture considerations

- Designers and manufacturers of sets should ensure that the design minimises risks to all parties involved with handling the set. (Refer to Section **8.1** of this guide)
- The design of sets must include considerations for minimising the weight of set components.
- The weight of each piece is clearly shown on the set piece to assist in manual handling practices.

Producer/Promoter considerations

- Provision of risk identification, assessment and control information to venues includes manual handling information.
- Purpose built trolleys for set pieces should be considered as part of the manufacturing process.

Employer considerations

- When purchasing equipment an assessment should be made of its suitability for the intended purpose and ensure instructions for correct operation are conveyed to the operators.
- Consultation with the producer or Company Manager takes place as soon as possible after a venue has been hired, in order to determine the nature of the set coming into a venue.
- When purchasing manual handling equipment, consideration should be given to the suitability for the task

and the wide variety of set components that may have to be handled.

- Consultation with employees and health and safety representatives is essential.
 - Factors to be considered for reducing risks are as follows:
 - minimise the lifting and lowering forces exerted;
 - avoid the need for bending, twisting and reaching movements;
 - reduce pushing, pulling, carrying and holding;
 - size, surface characteristics, stability and weight of objects;
 - vertical and horizontal movements involved;
 - workplace layout and general environment;
 - work posture and space requirements;
 - transportation and reception;
 - handling at the workplace;
 - storage and distribution.
 - New employees and those employees returning from an extended absence should be closely monitored and allowed a period of adjustment to build up the skills and abilities required to perform manual handling tasks safely. This is especially important in the entertainment industry because of the high proportion of casual employees engaged to bump in and out sets. These employees may not have been doing any physical labour for some time and are therefore more at risk of injury in these situations.
 - All employees should have the skills and experience required to perform the task. A mismatch can create an increased risk of injury. It should be remembered that young workers are more at risk of injury than adult workers as they are still developing physically, however young people should not be discriminated against.
 - Training in the principles of correct manual handling and lifting techniques is also essential for all persons who will be involved in handling set pieces. Due to the complexity of shapes and weights to be handled, particular attention should be paid to team lifting techniques. Training programs conducted for people in the industry should be venue specific and preferably conducted on site using examples of set pieces and props.
Training should include the following: -
 - a review of the risks to health and safety from manual handling in the industry;
 - the magnitude of the problem;
 - a review of the potential effect of manual handling injuries;
 - job and individual risk factors associated with manual handling injuries;
 - control strategies, with the primary emphasis being placed on work organisation, job and task design;
 - safe manual handling techniques;
 - the safe use of mechanical handling aids and personal protective equipment;
 - the responsibilities of all parties.
- Specific training should include the following: -
- simple aids, for example, levers, sliding rails, trolleys, road crates, lifting straps;
 - cranes and hoists, for example, overhead travelling cranes, mobile hoists and chain motors;
 - flying systems, including loading of weights;
 - carrying and stacking of flats;
 - carrying and storage of tarket and similar flooring surfaces;
 - industrial vehicles including fork lifts, stackers and two wheel trolley jacks.

- storage of seating plats and movement of bleachers
- orchestra pit operation.
- There are no prescribed absolute limits for weight to be lifted because of the enormous range of physical dimensions of people, however a general guide is as follows: -
 - When seated it is not advisable to lift loads in excess of 4.5kg.
 - Some evidence shows that the risk of back injury increases significantly with objects above the range of 16 - 20 kg, therefore, from the standing position, it is advisable to keep the load below or within this range.
 - As weight increases from 16 kg to 55 kg, the percentage of healthy adults who can safely lift, lower or carry the weight decreases. Therefore, more consideration is required for weights above 16 kg and up to 55 kg in the assessment process. Mechanical assistance and/or team lifting arrangements should be provided to reduce the risk of injury associated with these heavier weights.
 - Generally, no person should be required to lift, lower or carry loads above 55 kg, unless mechanical assistance or team lifting arrangements are provided to lower the risk of injury.
- It is essential to co-ordinate and carefully plan team lifts taking into account the following factors: -
 - An adequate number of persons in the team
 - That one person is appointed to co-ordinate the lift.
 - That the team members are of similar capacity and know their responsibilities during the lift.
 - That appropriate training in lifting has been provided.
 - The lift has been rehearsed, including what to do in case of emergency.
- The Manual Handling Code of Practice requires an employer to keep records associated with the implementation of the Code of Practice. The retention of records is designed to make the task of review and evaluation of effectiveness of controls easier. Records generally should include information on:
 - the manual handling injury prevention program;
 - risk identification and assessment reports;
 - design modifications to and specifications for plant, equipment, containers, workplaces and work processes;
 - risk control measures implemented;
 - and
 - training and education activities.

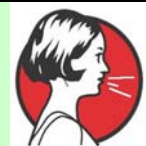
9.3 Working at Heights



Employers have a legal responsibility to identify risks associated with working at heights and to take steps to minimise those risks.

Falls from heights or unprotected openings have the potential for death or serious injury unless adequate controls are implemented. Work at heights includes not only work in elevated areas, such as grids, scaffolds or elevating work platforms but also working around unprotected openings such as stage lifts, traps and pits. Planning is an integral part of ensuring that workers are safe from the risk of falls during entertainment activities

9.3.1 General information



The OHS Regulation sets out specific requirements to address falls from heights and measures to control risks associated with this work.

The main principles are:

- Provision and maintenance of
 - Stable and securely guarded work platform (such as scaffolding or other forms of portable work platforms)
 - Fencing, guarding, handrails or other physical barriers that are capable of preventing falls of persons
 - Provision of physical restraints – that either prevent a fall or arrest a fall of a person from a height of more than 2 metres.

- **Hazard Identification:**

Hazard identification is a major part of the planning process. Prior to commencement of work, all hazards associated with falls from heights should be identified. Consultation with technical staff will provide information on the most likely hazards that will be encountered during performances as well as bump in and bump out situations. Discussions with the producer and or Company Manager and sourcing information from the set designer and manufacturer will also assist in the planning process. (Refer to Section [3.1](#) Hazard Identification).

Factors which can cause a person to fall can include:

- Sudden acceleration or deceleration;
- Moving from one surface to another;
- Capability of the surface to support a load;
- Openings, holes, pits, traps, stage lifts that are not identified or protected;
- Open edges that are not protected;
- Unsuitable use of ladders or use of poorly maintained ladders;

- Change of levels;
- Loss of hand grip;
- Slippery surfaces;
- Unsuitable footwear;
- Leaning out over edges;
- Catching of clothing;
- Unsatisfactory work lighting;
- Fall prevention and arrest systems and devices not provided or used incorrectly.

Risk Assessment

Once all potential hazards are identified, the risks associated with those hazards should be assessed in terms of their potential to do harm. (Refer also to Section 3– Risk Management)

Risk Control

Risk control measures must then be put into place, taking into consideration the Hierarchy of Controls and ensuring that personal protective equipment is used as the least preferred option. Control measure include ensuring that:

Stage areas

- all traps are adequately marked and a standard operating procedure is written in relation to the safe use of the trap. The standard operating procedure should ensure that trap covers are in place at all times when the trap is not in use;
- all stage lift edges are adequately marked and performances are choreographed to ensure separation from unprotected edges. A dedicated spotter or more, dependent on the risk involved should be in position at the lift edge at all times when the stage lift is in the down position. In some circumstances, an infrared beam, linked to the backstage communication system and located at least one metre from the edge of the stage lift could be used to provide a warning to crew working near to a stage lift. The system should be set up so that any person entering the beam would hear a warning signal on their headset and have enough separation distance to provide adequate time to heed the warning. A standard operating procedure should be written and implemented for use of the stage lift for each new production;
- orchestra pit or stage edges should be protected by a barrier located at least one metre from the edge during all non performance times. The barrier should be erected to withstand the force of a person falling against it. Note that non performance times excludes rehearsals and technical runs;
- all revolves or rotating sections of the stage must be clearly marked;
- stairways in sets should have handrails built in accordance with *As 1657 – Fixed platforms, walkways, stairways and ladders*;
- all barriers, handrails or guardrails must be between 900 and 1100mm high.

Elevated work platforms and work spaces:

Elevated work platforms can include self elevating work platforms (SEWPs) such as Cougars, Genie lifts, Maxi Lifts, Scissor Lifts as well as tallscopes, lighting and sound bridges, balconies and the like. Reference should be made to the legislation in relation to certification requirements for operators of SEWPs.

- Only trained personnel are be allowed to operate self elevating work platforms. Attention should be given to

daily inspections to ensure that the SEWP is safe to use and to maintenance of the units.

- It is important to use the most appropriate type of SEWP for the task. An assessment of the risks associated with each task will assist in determining the most appropriate work platform to use.
- Outriggers should be used at all times. If it is not possible due to the configuration of a set to use outriggers, a different type of lifting device should be used.
- The manufacturer's operating procedures must be followed at all times.
- The safe working load for the elevated platform must be shown on the platform and the limit must not be exceeded.
- No person should lean out over the safety barrier on an elevated work platform, nor suspend or balance scenery or equipment so that the centre of gravity is outside of the safety barrier.
- If it is necessary to move a SEWP with the boom raised and a person on the platform, outriggers must be no more than 10mm from the floor surface and the person on the platform's body must not protrude from the confines of the working platform.
- Persons working beneath an elevated work platform should wear hard hats.

Scaffolds

Scaffolding is a common means of providing a safe work platform for most types of work and is sometimes used as a performance area.

- Scaffolding which exceeds a height from which a person could fall more than four metres can only be erected or dismantled by a holder of a certificate of competency for that class of scaffold, or a person training under the direct supervision of a certificated person.
- If the potential fall distance from a scaffold is less than four metres, it can only be erected and dismantled by a competent person who has been trained in respect of the type of scaffold being used.
- Control measures which should prevent the risk of injury from scaffold collapse (irrespective of the type of scaffold used), in order of preference are:
 - The design of scaffolding;
 - Preparation of a scaffold plan;
 - Work practices;
 - Training;
 - Erection of scaffolds;
 - Soleplates
 - Tie assemblies;
 - Loading of scaffolds;
 - Inspection and maintenance procedures.
 - Installation of barricades;
 - Erection of signs

Reference should be made to *AS 1576.1 Scaffolding: General Requirements* for additional information.


Ladders

- Ladders used should be designed in accordance with the appropriate Australian Standard, *AS 1892 – Portable Ladders, Parts 1 and 2* and *AS1657 Fixed platforms, walkways, stairways and ladders – Design. Construction and installation*.
- Ladders should be designed and constructed to have a load rating appropriate for the work to be performed.
- Ladders should be maintained in good condition and be clear of grease or oil prior to use.
- Non skid safety feet should be installed on all straight ladders before use.
- Portable metal ladders should not be used for electrical work. Metals ladders should have a sign on them stating, “Caution – Do not use around electrical equipment”.
- Ladders should not be positioned in access areas or within the arc of a swinging door, without additional measures being taken to safe guard a person on the ladder. Such measures would include locking off and signing doors and the use of barriers or safety cones to prevent access to the area where the ladder is being used.
- Ladders should only be used on flat, non slip surfaces.
- Straight ladders should be tied off or otherwise secured when in use.
- Single and extension portable ladders should be pitched at a slope of not less than an angle of 1 horizontal to 4. The ladder should extend 900mm above the surface where a person can gain access.
- Ladders should not be used to increase the height from a working platform or elevating work platform.

9.3.2 Personal Fall Protection Equipment

Personal Fall Protection Equipment systems are systems designed to stop the fall of a person. They should be used when there is a risk of a person being injured as a result of a fall and there is no way to change the design to eliminate a fall risk. The personal fall protection equipment is be used to:

- minimise the risk of a person from falling from a height – travel restriction devices;
- or
- minimise the risk of injury to a person after a person has fallen from a height – fall arrest device.

	<p>Employers have legal obligations for fall protection under the OHS Regulation. If a fall arrest device is provided for the use of employees at work, these obligations include the following:</p>
	<ul style="list-style-type: none"> • A competent person, before their first use and then on a regular basis, inspects all anchorage points for the device so they are capable of supporting the design loads. • If the load-bearing capacity of an anchorage point is impaired, the anchorage is immediately made inoperable so as to prevent its use. • Any harness, safety line or other component of the device that shows wear or weakness to the extent it may cause the device to fail is not used. • All persons using the device have received training in the selection, assembly and use of the system. • Adequate provision is made for the rescue of a person whose fall is arrested by a fall arrest device.

9.3.3 Additional considerations for fall protective devices:




- The most appropriate form of personal fall protection device should be chosen taking into account the risks involved and in consultation with the health and safety representative and employees working in the area. Reference can be made to *AS 2626 Industrial Safety Belts and Harnesses – Selection Use and Maintenance*.
- Personal fall protection systems that do not allow a person to fall are preferred over those which stop a person once they have fallen.
- Anchorage points must be capable of sustaining the load of a person falling.
- All people who are required to use personal fall protection systems must be trained in the use and maintenance of the system.
- Adequate supervision must be provided to workers.



9.3.4 Rescue arrangements

It is the responsibility of all employers to ensure that adequate arrangements for rescue are incorporated into standard operating procedures for working at heights. Where fall arrest devices are used, staff must be trained in rescue arrangements.

9.4 Falling objects

A falling object can be any object or material that may fall from a height but also includes objects that can be propelled sideways or upwards which can strike a person and be capable of causing injury to the person who is struck by the object or material.

	<p>Employers are required to identify the potential for injuries as a result of falling objects, to assess the risks and to implement appropriate control measures to eliminate or control the risk. In relation to the provision of control mechanisms, the following legislative provisions apply.</p>
	<ul style="list-style-type: none"> • Provision of safe means of raising and lowering plant, materials and debris in the place of work, • Provision of a secure physical barrier to prevent objects falling freely from buildings or structures in or in the vicinity of the place of work, • If it is not possible to provide a secure physical barrier, provision of measures to arrest the fall of objects, • Provision of appropriate personal protective equipment.

	
<p>Hazard Identification</p>	<p>Hazard identification is a major part of the planning process. Prior to commencement of work, all hazards associated with falling objects should be identified. Consultation with technical staff will provide information on the most likely hazards that will be encountered during performances as well as bump in and bump out situations. Discussions with the producer or Company Management and sourcing information from the set designer and manufacturer will also assist in the planning process. (Refer to Section 3.2 Hazard Identification).</p> <p>Factors which can cause objects to fall include:</p> <ul style="list-style-type: none"> • Unsecured tools when working on a grid or other elevated platform; • Storage of equipment, materials and tools near unprotected edges and openings; • Placing materials and equipment near unprotected edges and openings; • Unsecured props or scenery, especially during bump in, fit up and bump out situations; • Defective or damaged ropes and slings; • Inadequate mechanism for securing chains on chain motors; • Inadequate braking or failure of flying systems; • Failure to warn people prior to moving flown scenery;

	<ul style="list-style-type: none"> • Failure to adequately secure luminaires with safety chain and inadequate maintenance of safety chains; • Slips and falls of performers carrying props, with the potential for props, firearms, weapons or parts of costumes to be propelled into orchestra pits; • Inappropriate choreography for performances creating the potential for the falling object to be a person who lands on another person
Risk Assessment	Once all potential hazards are identified, the risks associated with those hazards should be assessed in terms of their potential to do harm. (Refer also to Section 3.3– Risk assessment)
Risk Control	<p>Risk control measures must then be put into place, taking into consideration the hierarchy of controls and ensuring that personal protective equipment is used as the least preferred option. Control measures include ensuring that:</p> <ul style="list-style-type: none"> • All tools are secured when working at heights and when climbing ladders. • Toe boards or kick boards are installed on walkways and elevated platforms. • Cables are taped down in areas where people are walking; • Materials, equipment and tools are not stored on walkways or platforms. • Housekeeping is of a high standard to ensure that loose objects do not create a trip hazard or are propelled over edges. • Adequate maintenance is carried out on all flying systems, ropes, slings, barrels, safety chains and other similar equipment. • All set pieces are adequately secured. Particular attention should be given to securing large pieces of scenery during bump in, fit up and bump out situations. • A competent person prior to use, inspects any equipment used for suspending objects. • Proper warning is provided to all persons prior to flying scenery. • Training is provided to all performers on the correct method of carrying firearms and weapons. • Hard hats are worn when people are working at heights at the same time when people are working below. A risk assessment will assist in identifying times during bump in/bump outs and maintenance periods when such personal protective equipment should be worn.

9.5 Fatigue

9.5.1 Effects of general fatigue

Fatigue and the work environment do not mix. There is ample evidence of the correlation between fatigue and mistakes at work leading to severe injury. It has been estimated that about two thirds of shift workers suffer some form of ill health and about a quarter are eventually forced to give up shift work as a result. It should also be noted that tolerance for shiftwork decreases with age.

Insufficient sleep and chronic fatigue are the most common problems for people who work shift work. Sleep duration is typically about 2 hours less than normal when sleeping in the day time. The sleep wake cycle is one of the most dominant circadian rhythms where hormone production, body temperature and sleepiness are coordinated. Workers on shift work are more likely to be disturbed by traffic and household noise in the day time. The body never fully adjusts to a reversed sleep/wake cycle. During shift work some functions adapt over consecutive shifts but others resist change. The body returns to normal daily variations when normal activity and sleeping patterns are resumed.

Due to the nature of the entertainment industry, fatigue can be a predominant factor in the incidence of injury and illness. Long shifts combined with time pressures can significantly slow down reaction times and lead to lack of clear judgement especially in bump in and bump out situations. Perception is poor and slow and there can be subjective feelings of weariness, somnolence, faintness and a decline in both bodily and mental performance. The level of fatigue increases with the number of hours worked and is more pronounced during the second half of a shift, especially between 2.00 and 6.00 am. Fatigue also increases with the number of shifts worked.

Shift work can also interfere with domestic and social life, adversely affecting relationships and reducing quality of life for the worker and members of the worker's family. Consideration of these factors should be given not only to the work environment but also to travel to and from the place of employment.

9.5.2 Prevention of general fatigue.

The main factor in preventing adverse effects of fatigue is to ensure that work is planned so that the risk of accidents is not increased through the fatigue of workers. Consideration should be given to shifts to minimise the length of time worked and to the provision of adequate breaks during the work period. There is also some evidence to support adequate nutrition with a high carbohydrate content as a factor in minimising the probability of fatigue effects.



In the Entertainment Industry where there is the potential for workers to work over 12 hours, producers and employers should consider rostering different crews rather than have one crew work extended periods or even the duration of the bump in / bump out. Where time worked included travel between venues, the schedule should be constructed to allow appropriate rest time before subsequent performances, or travel should be avoided immediately after performances ending late in the day. Consideration must also be given to transport in that unreasonable expectations must not be placed on transport drivers or any other contractor or subcontractor engaged to transport sets, materials and equipment.

No employee in the Entertainment Industry should be rostered to work more than 12 hours in one shift. Two to three 12 hour evening/night shifts are the recommended maximum number of consecutive shifts aimed at reducing the potential for fatigue to build up.

In establishing the duration that one crew should work, the workload should be evaluated individually in terms of physical or mental effort involved and the nature of the hazards encountered. It is recommended that long shifts be avoided where there is “heavy work”, such as bump in and bump outs. Special consideration should be given to change over time between crews, to enable adequate exchange of information. It is important to ensure that there is adequate first aid cover at least one person should hold a current first aid certificate.

9.5.3 Multiple Employers

In the Entertainment Industry, many people are engaged by more than one employer. This means that it can be difficult to obtain information from employees on the number of hours that they are working unless there is a contractual obligation for them to declare any potential conflict of interest, which includes working for other employers. Information on second employers can be obtained at interview for new staff. All employers should advise new employees of the policies in place to protect their health and safety. One of these policies should relate to the maximum allowable hours of work. There is an onus on the employee to advise the employer if they are engaged by more than one employer. An assessment of the associated risks can then be undertaken and appropriate controls implemented. The employer also has an onus to monitor the safety of employees. Should an employee be exhibiting symptoms of fatigue that could impact on their ability to perform work safely, the employer has a responsibility to ask the employee about other employment and any other factors that could be contributing to their fatigue. A policy to send affected employees home should be developed in consultation with employees.

9.5.4 Training

Information and training for workers on shift work is another important factor. It is recommended that employees working shift work are provided with information on minimising the effects of fatigue.

9.5.5 Additional Information

The WorkCover publications *How to Devise an Effective Roster* and *How to Manage Shift Work* provide helpful information on safe work scheduling. Reference should also be made to the provisions of the Road Traffic Act. Other sources include:

Labor Council of NSW : <http://unionsafe.labor.net.au/hazards/104787141324939.html>

National Health and Safety Commission:

<http://www.nohsc.gov.au/researchcoordination/shiftwork/4.htm#6-1>

9.6 Alcohol and Other Drugs

9.6.1 *Use of alcohol and other drugs in the Entertainment environment.*

The entertainment industry is deemed by some, to be a perfect environment for the excessive consumption of alcohol and the frequent use of other drugs. The International Labour Organisation (ILO) estimates that 20-25% of all occupational injuries are a result of drug and alcohol use and that 3-15% of fatal injuries are related to alcohol and other drug use. Alcohol and other drug problems have been estimated to cost the Australian economy approximately \$19 billion per year and a quarter of these costs relate to the workplace.

Whether a person chooses to drink alcohol or use other drugs is not a workplace issue. However, if a person chooses to drink alcohol or use other drugs and that person's work performance is affected, those effects are a workplace issue. Alcohol and other drug use can create a range of problems within a workplace. Employees affected by the use of alcohol and other drugs have an increased risk of injury to themselves and others as well as potentially losing their position with an organisation. Other effects of alcohol and other drug use are reduced reaction time, reduction in perception of risk, and a reduction in co-ordination. All these could be causal factors in an incident leading to injury. It should however, be recognised that these types of effects can be caused by issues other than drugs and alcohol, such as personal or other work related reasons.

9.6.2 *Management of Alcohol and other Drugs*



Each employer and contractor within the industry should ensure that they have a policy to state that the bringing of illicit drugs onto any work premises will not be tolerated. The policy should also address the measures that the employer or contractor will take to address the effects of alcohol at work. The procedure for dealing with an individual's poor performance due to the effects of alcohol and other drugs is the same as for dealing with any other issue. The main reason for this is that non medical personnel are not qualified to make medical diagnoses. However, if a person is intoxicated at work, consideration has to be given to maintenance of a safe place to work. No person should be asked to assess whether another is "drunk" or "stoned", merely to make a decision on whether the person is capable at that time, of performing their work in a safe manner. Consideration should also be given to the nature of the work the person is to perform and the risks associated with the work. There are many organisations that provide information on how to manage alcohol and other drugs, development of Drug and Alcohol Policies and Programs, assessment of work performance and ways of reducing alcohol and other drug problems. Of particular use is the National Centre for Education and Training on Addiction's *"Alcohol and Other Drugs – Options for Small Businesses"*.

It must be remembered however, that the information provided in this document cannot be used in isolation.



An alcohol and other drugs program, developed in consultation with employees, which incorporates


- management goals and objectives;
- how the policy will be implemented;
- the responsibilities of the employer
- all employees in implementing the Alcohol and Other Drugs Policy and education and training strategies,

should be developed to address these issues within each workplace.

Reference can also be made to the *Safety Guidelines for the Entertainment Industry*

9.7 Hazardous Substances

Workers in the Entertainment Industry can use or be exposed to a variety of hazardous substances such as chemicals including solvents, paints, dyes and glues, hair sprays, bleaches, cleaning products.

	<p>Part 6.2 of the Occupational Health and Safety Regulation sets out requirements in relation to Hazardous Substances in detail. These requirements include obligations of manufacturers, suppliers and employers in relation to hazardous substances. Employers have many obligations. The main ones include:</p> <ul style="list-style-type: none">• Providing and maintaining a register of hazardous substances used in the workplace• Provision of Material Safety Data Sheets (MSDS) to employees who could be exposed to the hazardous substances• Using the product as defined in the MSDS• Development of effective measures to manage safe use and possible exposure to any hazardous substances• Protection of the health and safety of all people including visitors, and the public.• Ensuring that all hazardous substances are labelled with the original label at all times.
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9.7.1 What are Hazardous Substances

Hazardous substances are used in many aspects of entertainment activities. The management of these substances is essential to ensure the long term health of employees engaged in using them. Management of hazardous substances can appear to be a complicated issue, but does not have to be if the following strategies are adopted.

Hazardous substances are those that are listed on the National Occupational Health and Safety Commission (NOHSC) *List of Designated Hazardous Substances*; or those that are determined to be hazardous by the manufacturer or importer of the substance on the basis of the NOHSC's *Approved Criteria for Classifying Hazardous Substances*.

There are 9 classes of hazardous substances:

- Toxic
- Very Toxic
- Harmful
- Corrosive
- Irritant
- Sensitising
- Carcinogenic
- Mutagenic
- Teratogenic

Toxicity (or the hazard level) is the ability of a substance to produce injury or death in a person. The more toxic the substance, the greater the possibility that a small dose of that substance will cause damage to health. There are three basic physical forms:

- Solids – including dusts and fumes
- Liquids – including mists and vapours
- Gases – including vapours

The physical form of a substance often depends on how it is being used and usually determines how easily a substance will move from one place to another, where it will go and how easily it will enter the body.

Health effects from exposure to hazardous substances depend on the nature of the substance, the nature of the individual, the site of the interaction with the body (inhalation, ingestion, dermal or mechanical injection), the dose or concentration of the substance, the frequency of exposure and the length of time that a person is exposed to a particular substance.

Adverse effects of hazardous substances can include immediate effects (acute) or can appear days, weeks, months or sometimes years after exposure (chronic). Acute health effects are immediate usually resulting from a single high dose exposure such as irritation to the eyes or irritation of the skin and respiratory system, headache, nausea, loss of coordination, dizziness and potential coma from exposure to solvents. Chronic health effects are those that occur over a long period of time, usually resulting from a series of high dose exposure over a short time or low dose exposures over a long period of time.

Health effects can also be local or systemic, either the area of the body the substance comes into contact with is affected or the substance causes damage to parts of the body away from the contact point due to absorption of the chemical into the blood stream as in the inhalation of solvent fumes.

The NOHSC Guidance Note – *Exposure Standards for Atmospheric Contaminants in the Occupational Environment* provides information of the exposure levels applicable to hazardous substances. Reference can be made to this document to determine the maximum permissible exposure to hazardous substances in the workplace.


9.7.2 Management of Hazardous Substances in the workplace



The philosophy of hazardous substances management is the same as that used for other forms of risks to health and safety – Identify the Hazard, Assess the Risk and Implement Appropriate Controls.

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An MSDS is essential in order to determine the nature of the substance. The MSDS should be in the NOHSC format, as this format will assist in identifying whether the substance is hazardous or not. If the MSDS is not in this format, further information should be obtained from the manufacture of the substance or if this is not sufficient, advice can be sought from WorkCover.

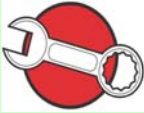
	<p>IDENTIFY THE HAZARD</p> <p>How to determine whether a substance is hazardous:</p> <ul style="list-style-type: none"> ➤ Is it on the NOHSC list? ➤ Does it fit the NOHSC criteria? ➤ Does it say so on the label? ➤ Does the MSDS give cause for concern? ➤ Is there other information that gives cause for concern?
	<p>ASSESS THE RISK</p> <p>In order to make a suitable and sufficient assessment you should:</p> <ul style="list-style-type: none"> ➤ Know what the substance is; ➤ Know whether the substance is hazardous or not; ➤ Know if there is a chance of a person being exposed to the hazardous substance, how much they are exposed to, for how long and how often they are exposed; ➤ Know how the substance is used (or misused) in the workplace; ➤ Know how to use this knowledge to assess the risk to a person's health. ➤ Include an assessment of the risks to the public if the substance is being used during a performance.
	<p>CONTROL THE RISK:</p> <p>The philosophy of hazardous substance control is to keep exposure to As Low as Reasonably Achievable, (the ALARA principle). In order to achieve this the following actions should be followed:</p> <ul style="list-style-type: none"> ➤ Introduce controls that remove, or reduce exposure to the substance. Where it is not feasible to achieve elimination of the substance, apply the hierarchy of controls. ➤ Make sure that employees are trained in working with the substance and have access to the relevant MSDS. ➤ Check that controls are suitable and are working properly. ➤ Know when to conduct monitoring or health surveillance to check if exposure is excessive. ➤ Keep records of all actions taken.

A list of substances deemed to be hazardous should be kept by the organisation together with the assessment record and agreed control methods. Touring companies should ensure that they carry relevant MSDS with them and provide a copy to each venue as part of the risk documentation.

In the entertainment industry, hazardous substances can be transported throughout Australia for use in the run of a production. In these circumstances, consideration must be given to the requirements of the Australian Dangerous Goods Code, which addresses the requirements for transportation of dangerous goods. Attention also must be paid to the storage requirements of dangerous goods, particularly flammable liquids and gases.

It is essential that the risk associated with these substances is assessed in each venue, as the environmental conditions may vary, thereby altering the potential exposure to workers. There may be a need to arrange air monitoring for some substances to determine whether the exposure levels are within the deemed “safe” levels in that particular venue. The assistance of a qualified occupational hygienist can be obtained to provide information on the need for monitoring, to conduct monitoring and perform an assessment if required.

9.7.3 Specific Entertainment Industry hazards

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING THE RISK	EXAMPLES OF CONTROL MECHANISMS
RESINS AND GLUES Urea formaldehyde resin glues are hazardous when they are heated in processes like sanding and machine cutting as the heating process can release hazardous formaldehyde into the air. Formaldehyde is irritant to both the mucous membranes of the eyes and the respiratory system. It is also a skin irritant. Some individuals show an allergic sensitisation following relatively small exposures. Low concentrations may trigger asthmatic attacks in sensitised persons. Formaldehyde is listed on the <i>NOHSC List of Designated Hazardous Substances</i> . The American National Institute of Occupational Health and Safety has recommended that formaldehyde be treated as a potential occupational carcinogen	<ul style="list-style-type: none"> • Exposure limits for each type (found in the MSDS) • The number of people who may be exposed including visitors • How often and for how long they may be exposed • Licensing provisions for flammable liquids 	Reference should be made to Section 9.7.2 – Hazardous Substances for general control mechanisms relating to hazardous substances. Some others relating to these substances include: <ul style="list-style-type: none"> • Wherever possible, water based paints should be used in lieu of solvent based paints. Pre – mixed paints should be used whenever possible. • If it is not possible to use pre-mixed paints, the mixing should be carried out in an area where local exhaust ventilation is available. • Personal Protective Equipment is selected used and maintained.
SOLVENTS	<ul style="list-style-type: none"> • Exposure limits for 	



THE HAZARD

FACTORS TO CONSIDER IN ASSESSING THE RISK

EXAMPLES OF CONTROL MECHANISMS

Use of solvents (chlorinated hydrocarbons) which are skin irritants causing chemical irritation and dermatitis. These substances are also central nervous system depressants and can lead to dizziness, drowsiness, nausea and vomiting. These symptoms in themselves have the potential to lead to severe injuries occurring, especially if solvents are used in confined spaces or if workers are working at heights. Solvents are also highly inflammable

each type (found in the MSDS)

- The number of people who may be exposed including visitors
- How often and for how long they may be exposed
- Licensing provisions for flammable liquids

Reference should be made to Section **9.7.2** – Hazardous Substances for general control mechanisms relating to hazardous substances.

ISOCYANATES

Isocyanates can be used in set and prop making. Isocyanates are mostly used in the production of polyurethane foams, but can also be found in some paints and glues. They are skin, eye and respiratory system irritants. In high airborne concentrations, the vapours have a primary irritant effect on the respiratory system causing coughing and a dry throat. The high exposures can result in decreased respiratory function with the possibility of pulmonary oedema, which can be fatal in some cases. Sensitisation can also occur in some individuals and hypersensitivity exists in a small percentage of the population

- Exposure limits for each type (found in the MSDS)
- The number of people who may be exposed including visitors
- How often and for how long they may be exposed
- Licensing provisions for flammable liquids


Reference should be made to Section **9.7.2** – Hazardous Substances for general control mechanisms relating to hazardous substances. Respiratory protective devices should also be worn when using Isocyanates and when hot wire cutting polystyrene foam.

TIMBER PRESERVATIVES

In some cases, preserved timber is used for set building. Arsenic is used in the preserving process and as long as it is dry and the preservative is fixed, it does not present a risk to the health of employees working on it.

- Does it really have to be used?
- The number of people who may be exposed including visitors
- How often and for how long they may

- If treated timber has to be used in set manufacture, it is recommended that treated timber is not burned as burning releases toxic gases into the air.

 THE HAZARD	FACTORS TO CONSIDER IN ASSESSING THE RISK	EXAMPLES OF CONTROL MECHANISMS
<p>MEDIUM DENSITY FIBRE BOARD (MDF)</p> <p>Wood panels such as particleboard, medium density fibreboard and plywood, laminated veneer lumber and laminated beams which use formaldehyde-based adhesives may emit small amounts of formaldehyde into the air.</p> <p>Research has indicated that generally, the amounts of formaldehyde emitted are well below the National Occupational Health and Safety Commission's exposure standard for formaldehyde of 1 part per million (ppm).</p> <p>However, unacceptable exposure levels could occur when large quantities of product are stored in a confined, poorly ventilated space or when plastic wrapping is removed from newly manufactured material.</p> <p>Wood dust and formaldehyde together have been reported to cause respiratory irritation with symptoms of dryness of throat, rhinitis and eye irritation as well as occupational skin disease.</p>	<p>be exposed</p> <ul style="list-style-type: none"> • Does MDF have to be used? • The working environment. • The amount of machining required. • Ventilation 	<ul style="list-style-type: none"> • Eliminate the use of MDF and use a safer alternative. • Properly designed and maintained dust extraction systems are used when machining woods. • Extraction systems are fitted with explosion vents, spark detectors. Electric motors used in woodworking areas are spark proofed. • Work areas should be well ventilated • Wood dust which gathers in the work area is removed by suction devices or wet sweeping. • Personal protective equipment is provided where extraction is not possible or ineffective. Protective clothing, in particular, a suitable dust mask or respirator, long shirt sleeves and gloves should be worn at all times to avoid skin contact. Remember to wash soiled clothing and do not shake off the dust.

9.8 Noise




The Occupational Health and Safety Regulation requires employers to ensure that no person is exposed to noise levels that exceed an 8 hour equivalent of 85dB(A) or peak at more than 140 dB (C)

The Code of Practice for Noise Management requires that personal protective hearing devices are provided if it is not possible to eliminate the risk of noise exposure or reduce the noise exposure to a suitable level.

9.8.1 What is noise and how does it affect people?

Sound pressure is measured in decibels (dB). The decibel scale is logarithmic, an increase of 3dB representing approximately a doubling of the sound pressure level. When the distance from a point noise source in a free field (ie in a three dimensional open space with no objects to reflect sound) is doubled, the sound pressure level drops by approximately 6dB. Doubling the acoustic energy equates to a 3dB increase in the level and a halving of the acoustic energy equates to a 3dB decrease. Therefore, if there is a 3dB increase in the noise level, the allowable exposure time is halved.

The following table is an example of exposure times for different sound pressure levels:

 SOUND PRESSURE LEVEL	Maximum permissible noise levels
	DURATION LEVEL (Unprotected ear)
85dB(A)	8 hours
88 dB (A)	4 hours
91 dB (A)	2 hours
94dB(A)	1 hour
97 dB (A)	30 minutes
100 dB (A)	15 minutes
103dB(A)	8 minutes
106 dB (A)	4 minutes
109 dB (A)	2 minutes
112 dB (A)	1 minute
115 dB (A)	30 seconds

The human ear can distinguish frequencies between 20Hz and 20 KHz, roughly equivalent to the range from the lowest note on a pipe organ to the highest overtone on a violin. Studies in the US have identified noise levels during rock concerts in the range of 90 dB (A) to 120dB(A) and symphony

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orchestra concerts from 80dB(A) to 110 dB (A). An American study taken over seven Broadway shows indicated that only one of the productions had sound levels below the American exposure standard of 90dB(A). Excessive noise can create a risk to hearing for employees and members of the public. It can also constitute a nuisance to those persons outside the venue. Most audience members will not attend events regularly enough to sustain serious hearing damage as a result of attending the performance. However very loud events can significantly contribute to sound pressure exposures that audience members receive at their work and leisure activities, therefore the overall risk to hearing is increased by exposure at entertainment activities.

Any loud sound can damage hearing if people are exposed to it for long enough periods or if the sound pressure level is sufficiently high to cause immediate damage. Acoustic trauma (ie rupture of the eardrum) can occur at sound pressure levels greater than 140dB. As the sound pressure level increases, there will be a much quicker effect in damaging hearing. Noise induced hearing loss is generally progressive in onset and the damage to hearing is permanent. A person's hearing ability can become temporarily or permanently impaired if their unprotected ear is exposed to excessive noise. Temporary hearing impairment is known as a temporary threshold shift and may be experienced as dull hearing or ringing in the ears after noise exposure. Recovery from temporary threshold shift may take from a few seconds to several days or weeks depending on the severity of the noise exposure. In most cases, hearing returns overnight but even temporary threshold shifts are causing damage. Repeated temporary threshold shifts result in permanent damage. The effect is widespread, especially in the Entertainment Industry. Reduction in hearing ability can result in fatigue, increased levels of stress or annoyance and communication difficulties. These effects can then affect concentration levels potentially leading to more incidents and injury. Hearing can also deteriorate due to the ageing process (presbycusis) or due to lack of good muscle tone in the middle ear caused by stress or poor diet.

9.8.2 *Legislative requirements in relation to noise*



Designers and manufacturers of stage equipment are responsible to ensure that the exposure standard is as far as is reasonably practicable, not above the exposure standard. In this case the exposure standard is an LAeq 8hr of 85dB(A) and a Lpeak of 140dB(lin) referenced to 20 micro Pascals. If the stage equipment is likely to emit an unsafe level of noise, the designer or manufacturer must also make information on the noise emitted by the plant and ways to keep the noise to the lowest level that is achievable, available on request to employers.

It should be remembered that in these circumstances, a producer or artistic designer of a theatrical performance or musical event also has a responsibility for exposed persons to the extent that they have

management or control over the sound pressure level for that event. Various other contractual relationships may occur within the industry and these employers owe a similar duty of care to their own employees.

The legislation also applies to:

- a licensee of a licensed premises where musical performances take place or bands are engaged;
- theatre management or drama company in a venue where a musical production is being staged;
- management of a venue in which concerts are given;
- a caterer employing food service staff at a venue; or
- any other person who employs someone under a contract of employment or apprenticeship.

Environment Protection Policies set out requirements in relation to “Industrial and Other Non Domestic Noise” and are relevant to performances at outside venues. They address noise pollution and set maximum noise levels for specific locations and times of the day.

9.8.3 Management of Noise - Audience

There is currently, no legislation setting noise exposure limits for members of an audience but there are general requirements in the OHS Act, which has the effect that audiences need to be protected against risks to their hearing. The Health and Safety Commission / Home Office/ Scottish Office recommends using an Event Equivalent Continuous Sound Level (*Event Leq*) of not exceeding 107dB(A) and providing warnings to the audience if the *Event Leq* is likely to exceed 96dB(A). These measurements should be used as a guide to protecting the hearing of audience members.



- If sound levels are to be effectively managed, a pre-event assessment, which includes the sound levels likely to be produced, should be conducted prior to the event. The assessment should not only take into account the noise levels within the venue area but also the level transmitted to surrounding premises.
- It is recommended that peak sound pressure levels do not exceed 140dB(lin).
- Monitoring of sound pressure levels should be conducted to ensure that maximum exposure levels are not being exceeded and that implemented controls are working effectively.
- Control measures can include ensuring that a well designed sound system that minimises variations in loudness throughout audience areas is used for all performances.
- It is recommended that audiences should not be allowed within 3 metres of any speaker at outdoor events.
- It is also recommended that hearing protection be made available for members of the audience.

9.8.4 *Vibration*



Sound and vibration energy at the low bass and sub-bass frequencies has the potential to compromise the integrity of structures, in particular relatively light weight temporary structures such as staging, lighting rigs, scaffolding platforms, giant video screens and temporary audience stands. (Source: The Event Safety Guide) An assessment of the risks associated with vibration must be undertaken to ensure that safe levels are maintained. Should the assessment identify potentially hazardous levels of low bass and sub bass sound and vibration, steps to reduce the vibration to acceptable must be implemented. Monitoring of these levels should occur during rehearsal, sound checks and performances. Additional information regarding the effects of vibration and the measurement of vibration and evaluation of effects in buildings, including ground borne vibration can be found in ISO 4866.

Appendix 7 (Section [10.7](#)) provides information of the management of noise in the entertainment industry.

9.9 Heat and Cold

The Cancer Council of Australia reports that exposure to ultraviolet radiation (UVR) from the sun is the main cause of skin cancer in Australia. The amount of sun exposure required to cause skin cancer varies greatly from one person to another, depending on skin pigmentation and probably other inherited characteristics. Workers in the Entertainment Industry are often engaged in activities associated with outdoor events or productions which means that they can be subject to extremes of temperature. Performers and crew can also be subject to temperature extremes as part of their performance and the nature of their costumes. There are particular hazards associated with working in either extremes of heat or cold.



Employers must ensure that they implement risk control measures to safeguard employees from risks arising from exposure to heat or cold.

9.9.1 Outdoor activities



Wet conditions cause the potential for slips and falls and cold conditions can affect the safe use of some plant and equipment. The potential for lightning strikes is present in some areas. Electrical storms and rain can affect the safe operation of electrical equipment.

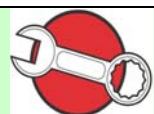
Working outside in either hot and or humid conditions can result in workers suffering the effects of heat exhaustion or heat stress which in some circumstances can be life threatening. Factors that can contribute to heat stress include temperature, humidity, excessive or poorly ventilated clothing and levels of physical activity.

Working outdoors can also expose a person to radiation from the sun or from wind chill.

9.9.2 A Risk Management Approach to Heat and Cold



A risk identification assessment and control process must be implemented to ensure that workers are protected from the heat.



Entertainment Industry employers should consider the following measures for protecting employees required to work in heat:

- Consult with employees re measures to reduce the impact of heat;
- Schedule work for cooler times in the day;
- Alternate periods of high physical demand with periods of lighter work;

	<ul style="list-style-type: none"> • Provide cool rest areas (in shade); • Provide adequate rest breaks; • Provide an adequate supply of cool drinking water; • Provide appropriate shading for work areas for example a “shelter” over sound mixing desks and sound technician’s position; • Provide protection from sources of radiant heat; • Provide sunscreen and hats; • Provide training on the effects of heat and the measures to control them.
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9.9.3 How to recognise effects of heat and cold

9.9.3.1 Cold - Hypothermia

Hypothermia is a condition where the body's temperature drops below normal and the body loses heat faster than heat can be made. The body then attempts to provide heat by muscle action and shivering.

Early symptoms include shivering, cold and pale skin, apathy, and impaired judgment. Later symptoms include drowsiness or weakness, confusion, slow pulse and breathing, and passing out. Hypothermia is an emergency. If untreated the condition in extreme cases may result in death.

9.9.3.2 Heat – Dehydration

Dehydration is a lack of water, particularly in body tissues and can be caused by water deprivation and exposure to heat, either from natural environmental conditions such as working outdoors or from a work process involving a high degree of radiant heat. Working in hot conditions can cause heat illness, affect concentration and behaviour and therefore increase the risk of injury. Dehydration reduces tolerance to heat, reduces concentration and work capacity and causes fatigue. Dehydration can also place added strain on the heart and circulatory system.

Heat discomfort may make some people feel irritable and tired. It can cause problems such as a heat rash. Early symptoms of an adverse reaction to heat are feelings of nausea, dizziness or weakness. Should these symptoms be ignored, the affected person may become heat exhausted and collapse.

9.9.4 Additional Information

Reference should be made to WorkCover’s *Code of Practice for Work in Hot or Cold Environments*

Further information can be obtained from *The Cancer Council’s Position Statement - Sun Protection in the Workplace* and from *The Labor Council of NSW guidelines*.

9.10 First Aid





The OHS Regulation requires employers to provide first aid facilities that are adequate for the immediate treatment of injuries and illnesses that may arise in the workplace.

Entertainment Industry activities can in some circumstances be hazardous. People may be injured despite controls put in place to minimise the risk of this occurring. Employers therefore must ensure that workers have access to adequate first aid facilities, first aid supplies and trained first aid personnel to treat the types of injuries and illnesses that might occur while they are at work.

When deciding on the types and numbers of first aid facilities and trained first aid personnel, consideration must be given to the nature of the working environment, the type of work that they will be doing and how many people are in that work area. For example, requirements for a set building workshop will be greater than those for an administrative environment and requirements for an outdoor event will be greater than those for an internal venue.

In the Entertainment Industry, consideration must also be given to the number of members of the public that will be at the venue. The number of people requiring medical treatment at any event will vary considerably as will the type of treatment required. These will also vary with environmental conditions particularly in relation to outdoor events. It is essential that all major events have suitable arrangements for the treatment and support of those in need. A risk assessment should be conducted in order to determine the appropriate number of first aiders for the event.

All employees should be provided with information regarding first aid provisions at induction. Venue hirers must also be advised of the arrangements for first aid when they commence the production run at the venue.

	Some considerations for the provision of first aid facilities for major events are:
	<ul style="list-style-type: none"> • the size of the audience • the nature and type of entertainment – including the use of special effects, pyrotechnics, fight sequences, weapons and animals. • the age, experience and physical capacity of performers and crew • the nature and type of audience – including the age range • the location and type of venue (indoor/outdoor, standing/seated) • seasonal weather conditions • information from other promoters regarding experience from previous events of the same type • the potential for misuse of alcohol and other drugs • the range of possible major incidents that could occur. For example: structural collapse, civil disorder, explosion, fire, and food poisoning. In this respect, consideration must also be given to the proximity of local emergency services and their capacity to react to any incident.

9.10.1 Risk Assessment process for First aid and Medical Facilities at Events

(Source HSE (UK) – The Event Safety Guide)



How to use the sample guide:

It is strongly emphasised that this sample system may require modification as some providers may choose to substitute medical staff or paramedics for first aiders. This information does not fulfil the requirement to carry out a full risk assessment for the event. Dedicated cover for performers or VIPs is not included in these figures.

- Use Table 1 to allocate a score based on the nature of the event
- Use Table 2 to allocate a score based on available history and pre-event intelligence
- Use Table 3 to take into consideration additional elements, which may have an effect on the likelihood of risk
- Use Table 4 to indicate a suggested resource requirement.

Table 1 – Nature of Event

Item	Details	Score
(A) Nature of the Event	Classical performance	2
	Public exhibition	3
	Pop/rock concert	5
	Dance event	8
	Agricultural /country show	2
	Marine	3
	Motorcycle display	3
	Aviation	3
	Motor sport	4
	State occasions	2
	VIP visits / summit	3
	Music festival	3
	Bonfire/Pyrotechnic display	4
	New Year celebrations	7
	Demonstrations/marches/political events	
	Low risk of disorder	2
	Medium risk of disorder	5
	High risk of disorder	7
	Opposing factions involved	9
(B) Venue	Indoor	1
	Stadium	2
	Outdoor in confined location (eg Park)	2
	Other outdoor (eg Festival)	3
	Widespread public location in streets	4
	Temporary outdoor structures	4
	Includes overnight camping	5
(C) Standing/seated	Seated	1
	Mixed	2
	Standing	3
(D) Audience profile	Full mix, in family groups	2
	Full mix, not in family groups	3
	Predominantly young adults	3
	Predominately children and teenagers	4
	Predominately elderly	4
	Full mix – rival factions	5
Add (A) + (B) + (C)+ (D)	Total score for Table 1	

Table 2 – Event Intelligence

Item	Details	Score
(E) Past History	Good data, low casualty rate previously (Less than 1%)	-1
	Good data, medium casualty rate previously (1-2%)	1
	Good data, high casualty rate previously (More than 2%)	2
	First event, no data	3
(F) Expected numbers	<1000	1
	<3000	2
	<5000	8
	<10 000	12
	<20 000	16
	<30 000	20
	<40 000	24
	<60 000	28
	<80 000	34
	<100 000	42
	<200 000	50
	<300 000	58
Add E + F	Total score for Table 2	

Table 3 – Sample of additional considerations

Item	Details	Score
(G) Expected queuing	Less than 4 hrs	1
	More than 4 hours	2
	More than 12 hours	3
(H) Time of Year (outdoor events)	Summer	1
	Autumn	1
	Winter	2
	Spring	1
(I) Proximity to definitive care (nearest suitable Accident & Emergency (A&E) facility)	Less than 30 minutes by road	0
	More than 30 minutes by road	2
(J) Profile of definitive care	Choice of A&E) departments	1
	Large A&E department	2
	Small A&E department	3
(K) Additional hazards	Carnival	1
	Helicopters	1
	Motor Sport	1
	Parachute display	1
	Street Theatre	1
(L) Additional on site facilities	Suturing	-2
	X-Ray	-2
	Minor surgery	-2
	Plastering	-2
	Psychiatric / GP facilities	-2
Add G + H + I + J + K Subtract L	Total Score for Table 3	

CALCULATION

To calculate the overall score for the event, add the total score for Tables 1+2+3 above.

Table 4 – Suggested resource requirement

Use the score from the above calculation to gauge the levels of resource indicated of the event.

Note: The following is an indication of the resources that may be required to manage an event based on an assessment of factors set out in the previous tables. It must be noted that this table, is intended for guidance only. It cannot encompass all situations.

The score refers to the suggested resources that should be available on duty at any one time during the event and not the cumulative number of personnel deployed throughout the duration of the event.

Score	Ambulance	First Aider	Ambulance Personnel	Doctor	Nurse	Ambulance Manager	Support Unit
<20	0	4	0	0	0	0	0
21-25	1	6	2	0	2	Visit	0
26-30	1	8	2	0	0	Visit	0
31-35	2	12	8	1	2	1	0
36-40	3	20	10	2	4	1	0
41-50	4	40	12	3	6	2	1
51-60	4	60	12	4	8	2	1
61-65	5	80	14	5	10	3	1
66-70	6	100	16	6	12	4	2
71-75	10	150	24	9	18	6	3
>75	15+	200+	35+	12+	24+	8+	3

9.11 Personal Protective Equipment

Personal Protective Equipment (PPE) is the last option of the hierarchy of control measures. There are however, some circumstances when PPE is and should be used.

These are:

- In the case of certain industrial processes, there are legislative requirements to provide PPE.
- When hazards can not adequately be controlled by other means
- As a temporary measure until a risk can be controlled by suitable corrective measures.



The OHS Regulation requires that where risk control measures chosen by an employer includes the use of PPE (for example, fall arrest devices, hard hats, respiratory protection), the employer must provide such items to each person at risk. The PPE must be appropriate for the hazard.



Workers should make sure that the PPE is fitted correctly and maintained in a good condition. Workers must be trained not only in how to use PPE correctly, but also how to look after it. It should be regularly inspected and maintained in a clean and fully effective condition. Defective equipment must not be used.

There are many Australian Standards that relate to PPE. One information source that is useful is HB9 – *Occupational Personal Protection* (from Australian Standards). This handbook refers to over 50 Australian Standards and some International Standards. It has chapters on general principles on personal protective equipment, the identification of common hazards likely to be found in the workplace and general control measure for reducing the risks they may present.



Choosing the correct PPE

In choosing the correct PPE there are a number of things that should be considered:

- The nature of the risk and how persons are exposed to it.
- How effectively the equipment will protect people
- The fit of the PPE for the wearer
- Wearability and comfort
- How long the equipment has to be worn
- How easy it is to maintain
- The availability of any replacement parts

Depending on the type of work being performed, the following types of PPE should be used in the Entertainment Industry. Some examples of use are provided, but an assessment of the risks will identify all circumstances where PPE should be used.

- Safety Helmets → to protect against falling objects etc
- Sun Protection → for outdoor work
- Safety Gloves → for loading and unloading trucks, set construction, bump in and out
- Eye Protection → for tasks that have the risk of flying objects
- Hearing protection → for noisy environments
- Respiratory Protection → when using hazardous substances that cannot be eliminated or substituted by less hazardous substances.
- High visibility clothing → for traffic management
- Wet weather clothing → for outdoor work
- Fall protection devices → for work at heights including performances

9.12 Workplace Violence

9.12.1 Introduction

Workplace violence and aggression include verbal and emotional abuse or threats and physical attack to an individual or to property by another individual or group. The impact of violence on a victim depends on the severity of the violence, his or her own experiences, skill and personality.

Violent acts can include:

- Verbal abuse in person or over the telephone
- Written abuse
- Harassment
- Threats
- Ganging up, bullying and intimidation
- Physical or sexual assault
- Malicious damage to the property of staff, customers or the business.

Violent acts can also include armed hold up which is covered in Section [8.8.2](#), of these Guidelines - Cash Handling.

9.12.2 A Risk Management Approach to Violence at Work



With regard to violence at work, one of the most effective ways for employers to meet their legal duties is to develop a violence prevention plan in consultation with employees. The plan should be an integral part of the overall approach to safety in the workplace and include the following steps.



1. Identifying the risk factors:

- Consult with your employees or their representatives.
- Decide on the category(s) of violence that could occur in the workplace.
- Conduct an audit of the workplace
- Review incident and injury reports.
- Keep records of your risk identification.

2. Assessing the risk of violence:

- Consider your identified risks.
- Determine the method of assessment.
- Determine the likelihood that violence will occur.

- Determine the outcome (injury/illness) if violence does occur.
- Decide whether or not your current control measures are adequate.
- Keep records of your risk assessment.

3. Controlling the risk of violence:

- Consider the work environment and workplace layout.
- Consider the types of interactions that occur in the workplace.
- Consider the work processes.
- Determine the control actions:
 - Can the potential/motive for violence be eliminated?
 - Can the level of violence be restricted or deterred?
 - Can the violent interaction be limited or removed?
 - Can you increase the defence of the potential victim of the violence?
- Implement the control actions.
- Keep records of your control actions.

4. Developing workplace procedures:

- Ensure employees know what to do if violence occurs.
- Develop procedures for:
 - induction, training and supervision;
 - work systems;
 - effective grievance, conflict and complaints resolution;
 - reporting and recording of workplace violence; and
 - emergency situations.
- Regularly review your violence prevention plan and violence control actions.
- Keep records of:
 - induction and training;
 - violence prevention plan; and
 - incident reports and injuries.

The NSW WorkCover Authority sets out eight practical steps to preventing workplace violence, bullying and harassment. These are:

1. Know your business (Consultation, Culture of the Workplace)
2. Develop a set of integrated policies (relating to occupational health and safety, equal opportunity, antidiscrimination, sexual harassment and discipline). Develop a model Code of Conduct.
3. Develop an anti-violence/bullying/harassment strategy. (Consider the physical environment, the work organisation, work procedures, work design and training and selection of staff.)
4. Consider specific preventative measures such as

- a. Training
 - b. Communication
 - c. Physical environment and layout
 - d. Work organisation and job design
 - e. Breaking bad habits
 - f. Creating a culture of respect
5. Develop a workplace violence policy and a grievance process
 6. Establish performance measures
 7. Educate, Communicate and Train
 8. Watch/ Monitor and Review.

9.12.3 What are employees required to do?



The OHS Regulation requires employees to protect their own health and safety, follow set work procedures and avoid adversely affecting the health and safety of others.

Employees need to ensure they do not contribute to workplace violence or participate in activities that may lead to violence such as horseplay, workplace initiation, bullying etc.

Although employees should report any risk or incident of violence to their employer, it is recognised that there are a variety of reasons why some employees may be reluctant to report these incidents. In these situations, employees are encouraged to report the issue to their elected health and safety representative (HSR) or other responsible person within the company.

Employees have the right and obligation to withdraw to a position of safety if they are exposed to violence. They do not have the right to retaliate physically or verbally unless it is in self defence. Under the *Criminal Law Consolidation (Self Defence) Amendment Act, 1997*, reasonable force can be used to defend yourself or another person if assault is imminent and there is no way out. However, the force used should only be enough to ward off an attack as unreasonable force may result in legal action being taken against the employee or their employer.

9.12.4 Additional Information on Violence in the Workplace

Additional information on this subject can be obtained from the WorkCover NSW Guide – *Violence in the Workplace* and *Workplace Violence – Prevention Strategies for your Business*. The WorkCover Corporation of South Australia has developed *Guidelines for Reducing the Risk of Violence at Work* that include steps to developing a prevention plan (with a sample) and also includes violence identification checklists.

This document is available on-line at www.workcover.com/documents/resViolenceGuidelines.pdf

The Attorney General's Department is currently developing guidelines entitled "*Prevention of Violence and Crime at Public Events: Implementing Good Practice*" The objective of the guidelines is to assist organisers plan and manage local community events to minimise or prevent crime and violence and to maximise safety and enjoyment. The guidelines are expected to be available later in 2004.

9.13 Amenities



The OHS Regulation requires employers to ensure that appropriate amenities are available for employees while they are at work.

The nature of the Entertainment Industry means that workers can be required to work in quite unusual situations and environments. It is important however, to ensure that adequate amenities as prescribed under the Regulation are provided.



Reference should be made to the WorkCover NSW *Code of Practice: Workplace Amenities* for guidance on the requirements.


9.14 Emergency Procedures

9.14.1 What is an emergency

An emergency is an abnormal and dangerous situation requiring prompt action to control, correct and return it to a safe condition. It may be a situation where injuries have been or could be sustained, which may not be immediately contained by people on duty at the time using the available resources, where damage to property has occurred or property has been placed in jeopardy.

In the Entertainment industry, there is a risk of an emergency situation having major consequences. There are many potential causes of an emergency situation such as fire; explosion; gas leaks; natural events such as earthquakes and bush fires and civil disturbances such as bomb threats, protests and riots.

9.14.2 Legislative requirements

	<p>The OHS Regulation requires employers to provide for emergencies in the workplace. The following is a summary of the legal obligations relating to the legislative requirements. Reference should be made to the OHS Regulation for all requirements. Reference should also be made to the Dangerous Goods legislation for additional provisions relating to the storage and handling of dangerous goods. The main objective of the legislation is to prevent as far as practicable, an emergency from occurring and to ensure that appropriate mechanisms including occupant education and training are in place to deal with any type of emergency that is likely to occur in a place of employment.</p>
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9.14.2.1

LEGISLATIVE PROVISIONS FOR EMERGENCIES UNDER THE OHS REGULATION	
<ul style="list-style-type: none">• Arrangements are to be made for the safe and rapid evacuation of persons from the place of work, emergency communications, and appropriate medical treatment of injured persons.	
<ul style="list-style-type: none">• If the employer does not have control, or has only limited control, of the place of work, the duty under this subclause applies only to the matters over which the employer has control.	
<ul style="list-style-type: none">• In determining the emergency provisions the following must be taken into account<ul style="list-style-type: none">○ the nature of the hazards at the place of work,○ the size and location of the place of work,○ the number, mobility and capability of persons at the place of work.	
<ul style="list-style-type: none">• If employees work at a fixed place of work, the employer must ensure that:<ul style="list-style-type: none">○ adequate arrangements are made for the shutting down and evacuation of the place of work in the event of an emergency;○ details of the arrangements for any such evacuation are kept on display in an appropriate location or locations at the place of work;• one or more persons are appointed and appropriately trained to oversee any such evacuation and, if appropriate, in the use of on-site fire fighting equipment.	

- An employer must ensure that all records on hazardous substances are kept at the employers' place of work and are made available on request to emergency service.
- Lighting must:
 - be adequate to allow all persons to move safely within the place of work
 - and
 - facilitate safe access to and egress from the place of work, including emergency exits.

OTHER LEGISLATION RELATING TO EMERGENCIES

- The Building Code of Australia sets out provisions in relation to the structure of buildings including compartmentation and separation requirements; access and egress specifications, emergency warning and intercommunication systems, smoke management systems, fire detection and alarm systems and fire fighting systems. There are common general requirements in the Building Code and each state and territory has its own additional requirements.
- Australian Standards also address emergency provisions, in AS3745 Emergency Control Organisation and procedures for buildings which provides advice on the development of emergency procedures and the identification of responsible persons in the Emergency Control Organisation by colour coding. There are also numerous other standards applying to emergency warning and emergency lighting systems; the Hazchem code, fire fighting apparatus such as hose reels and fire extinguishers, personal protective equipment such as breathing apparatus and rescue equipment.
- WorkSafe Australia has developed a National Standard for the Control of Major Hazard Facilities which mainly addresses high risk industries, but its essential principles and processes can be applied at any organisation as an aid to identifying likely emergency situations and preparation for dealing with them. Emergency planning is a specific requirement.

9.14.3 Emergency planning



- The essential elements of an emergency plan for entertainment venues are:
 - Identification of hazards
 - Identification of possible events – the type of incidents that may arise
 - Identification of possible effects of the event on the site and off the site.
 - Emergency response and control preparedness

- Notification of emergency services
 - Control of patrons during evacuation.
- The emergency plan should be easy to read and understand, contain a location and a site layout map or diagram.
- Consultation with employees working in each area will facilitate the development of emergency procedures and plans.
- A risk assessment will assist in determining the number of staff that are appropriate for the venue for evacuation purposes. Consideration should be given to the composition of the audience taking into account numbers of mobility impaired patrons, patrons with sight or vision impairment and those comprised of elderly or young persons. Consideration when determining staffing levels should also be given to the number of available exits from the venue and the size of the performing company.
- The plan should acknowledge that an emergency can arise at any time, even when a performance is not taking place. In entertainment venues, there are often personnel working at odd times throughout the day and night, either in technical areas or staff engaged in cleaning of the premises.
- Training of all staff is an essential component of emergency planning. Contractors, visiting companies, performers and visitors must not be overlooked nor should induction training for all new employees. Specialist training for an adequate number of fire wardens to be part of the emergency control organisation should be arranged and refresher training provided at least every two years.
- A training plan should be incorporated into the emergency plan and should include:
 - Basic training for every individual in his/her particular emergency activity.
 - Team training to familiarise each member with his/her duties and how s/he fits into the team.
 - Unit training to develop co-ordination between the various teams.
 - Integrated training of the organisation's emergency control team with outside public emergency services such as the fire brigade, police and ambulance services.
- An effective alarm system is essential for safe evacuation of entertainment venues and the system's ability to reach all relevant people under all operating conditions must be tested regularly as it is common for individuals to be working in "out of the way" places during performances.
- Emergency plans and evacuation procedures, once developed should be evaluated for their effectiveness and any deficiencies should prompt a review of the procedure or plan.

9.14.4 Identification of hazards

- There are many types of potential fire and other emergency hazards in entertainment venues. These hazards can be located backstage in workshops, dressing rooms, in storage areas, on stage, in areas occupied by audiences or above stage level in grids and on lighting bridges. The following list identifies some potential hazards to be considered when addressing emergency plans:

- **General hazards:**

- Lack of sprinkler systems.
- Wrong type of fire extinguishers.
- Blocked access to fire fighting equipment.
- Inadequate number and size of emergency exits.
- Blocked or locked exits.
- Fenced off areas with locked gates.
- Lack of emergency power sources.
- Lack of emergency lighting.
- Lack of training in emergency and fire extinguishing procedures.
- Lack of practice or drills for responsible parties.

- **Backstage Hazards**

- Inadequate storage of solvents and solvent containing materials.
- Unsafe storage of flammable and combustible materials – including theatre scenery.
- Spraying of flammable and combustible paints and coatings in the vicinity of ignition sources.
- Welding in close proximity to combustible materials.
- Non existence of hot work procedures.
- Lack of adequate exits for dressing rooms.

- **Stage hazards**

- Unsafe use of pyrotechnics and naked flames.
- Unsafe electrical wiring.
- Unsafe lighting.
- Placement of lamps near combustible materials.
- Lack of fire retardant on scenic elements and drapes.
- Lack of sprinkler systems and smoke control systems.
- Lack of adequate exits from stage area.

9.14.5 Management of Emergencies

- The responsibility for evacuation of an audience rests with the venue manager. It is essential therefore that all venue hirers understand that control of a stage and evacuation signals remain with the venue manager.
- The principle on which means of escape provisions are based is that people, regardless of the location of a fire or other source of emergency, should be able to proceed safely along a recognisable escape route, without outside assistance, to a place of safety.

- Adaptation of stages and performance venues can sometimes interfere with “normal” evacuation routes. It is essential therefore that the venue manager ensures for each production that:
 - exits are suitable and sufficient in number;
 - exits are distributed so as to allow people to have an alternate exit if one route is blocked by fire or other emergency situation;
 - exit and exit routes are clearly indicated;
 - escape routes are adequately lit;
 - the plan for each particular production is documented and communicated to all relevant personnel.
 - In order to ensure that confusion is avoided, evacuation announcements must include clear information advising audience members of the actions they must take. The announcement can be pre – recorded and played through the public address system but a back up system must be available in case of power failure.

Additional guidance for Emergency provisions can be obtained from “*Emergency Management for Public Venues in Australia – Guidelines*” developed by Emergency Management Australia and the Venue Managers Association.

10 APPENDICES

1. List of Approved Codes of Practice
2. List of Australian Standards
3. List of NOHSC Guidance Notes
4. How to develop Standard Operating Procedures
5. Risk Template
6. Induction Check list
7. Noise in Venues

10.1 Appendix 1 - NSW WorkCover Codes of Practice:

- *Occupational Health and Safety Consultation*
- *Risk Assessment*
- *Control of Workplace Hazardous Substances*
- *Preparation of Material; Safety Data Sheets*
- *Labelling of Workplace Hazardous Substances*
- *Safe Use and Storage of Chemicals*
- *Noise Management and protection of hearing at work*
- *Workplace Amenities*
- *Work in Hot or Cold Environments*
- *Safe Use of Synthetic Mineral Fibres*
- *Cash in Transit*
- *Safe Handling of Timber Preservatives and Treated Timber*
- *Workplace Amenities*
- *Low Voltage Electrical Work*

(All these are available on the WorkCover website: www.workcover.nsw.gov.au)

10.2 Appendix 2 - Australian Standards Publications:

- AS 1104S: Informative symbols for use on electronic equipment
- AS 1200: Pressure equipment
- AS 1259.1: Acoustics Sound Level Meters – Non-integrating
- AS: 1259.2: Acoustics Sound Level Meters – integrating - Averaging
- AS/NZS 1269.1:1998 Occupational noise management Measurement and assessment of noise emission and exposure
- AS 1270:2002 Acoustics - Hearing protectors
- AS 1318:1985 Use of Colour for the marking of Physical Hazards and the Identification of certain equipment in Industry (Known as the SAA Industrial Safety Colour Code) (Incorporating Amdt1)
- AS 1319: Safety signs for the occupational environment
- AS 1336:1997 Recommended practices for occupational eye Protection
 - AS 1338.1:1992/Amdt1-1994 Filters for protection against radiation generated in welding and allied Operations
 - AS 1338.2:1992: Filters for protection against ultra-violet radiation
 - AS 1338.3:1992 Filters for protection against infrared radiation
- AS 1345:1995 Identification of the contents of pipes, conduits and ducts
- AS 1418: SAA Crane Code
- AS 1418.2: Cranes (incl. Hoists and Winches).
- AS 1428.1: Design for access and mobility
- AS 1470: Health & Safety work - principles and practices
- AS 1473: Guarding and safe use of woodworking machinery
- AS 1543: Electrical Equipment of Industrial Machines
- AS 1576: SAA Metal scaffolding code - Parts 1 to 4
- AS 1577: Scaffold planks
- AS 1657: Fixed platforms, walkways, stairways and ladders – Design, construction and installation
- AS 1668: Rules for the use of mechanical ventilation of air conditioning in buildings - ventilation requirements
- AS 1670: Automatic fire detection and alarm systems - system design installation and commissioning
- AS 1674: Safety in welding and allied processes
 - Part 1. Fire precautions
 - Part 2. Electrical
- AS 1680: Interior lighting.
 - Part 1 Amdt1-1993: General principles and recommendations
 - Part 2: Recommendations for specific tasks (Interior)
- AS 1688: Portable timber ladders (Including step-ladders and trestle-ladders)

- AS 1715: Selection, use and maintenance of respiratory protective devices
- AS 1716:1994/Amdt 1-1996 Respiratory protective devices
- AS 1735: SAA Lift Code - Lifts, Escalators and Moving Walks
- AS 1768: Lightning Safety
- AS 1788: Abrasive wheels (Parts 1 and 2)
- AS 1873: Explosive powered hand held fastening tools, fasteners and explosive charges.
- AS 1851: Maintenance of fire protection equipment
 - Part 1: Portable fire extinguishers
 - Part 2: Fire hose reels
 - Part 3: Automatic fire sprinkler systems
 - Part 4: Fire hydrant installations
- AS 1885.1: Workplace injury and disease recording standard
- AS 1891: Industrial safety belts and harnesses
- AS 1892: Portable ladders
- AS 1893: Code of Practice for the Guarding & Safe use of Metal and Paper cutting guillotines
- AS 1940: The storage and handling of flammable and combustible liquids
- AS 2030: SAA Gas Cylinders Code
- AS 2161: Industrial Safety Gloves and Mittens
- AS 2187: SAA Explosives Code
 - Part 1: Storage and land transport Part 2: Use of Explosives
- AS 2210: Safety footwear
- AS 2211: Code of practice for Laser safety
- AS 2220: Emergency warning and intercommunication system in buildings
 - Part 1: Equipment Design and Manufacture Part 2: System design, installation and commissioning
- AS 2293: Emergency evacuation lighting for buildings:
 - Part 1: Design installation and Operation Part 2: Inspection and maintenance
- AS 2359: SAA Powered Industrial Truck Code - Part 1
- AS 2430: Classification of hazardous areas: Part 3: Specific occupancies
- AS 2550: Cranes, hoists and winches – Safe Use
- AS 2593: Boilers - Unattended and limited attendance
- AS 2626: Industrial safety belts and harnesses - selection use and maintenance.
- AS 2865: Safe working in a confined space
- AS 3000: Electrical installations (Known as the Australian/New Zealand Wiring Rules)
- AS 3001: Electrical installations - Relocatable premises (including caravans and tents) and their site installations
- AS 3002: Electrical installations - shows and carnivals
- AS 3005: Electrical installations of tents and similar temporary structures for domestic purposes

- AS 3100: Approval and test specification- General requirements for electrical equipment
- AS 3190: Approval and test specification Residual current devices (current-operated earth-leakage devices)
- AS 3533: Amusement rides and devices
- AS 3569: Steel wire ropes
- AS 3590: Screen based work stations
 - Part 1: Visual display units
 - Part 2: Work station furniture
 - Part 3: Input devices
- AS 3640: Workplace atmospheres - method for sampling and gravimetric determination of inspirable dust
- AS 3745: Emergency control organisation and procedures for buildings, Structures and Workplaces
- AS 3754: Safe application of powder coatings by electro-static spraying
- AS 3760: In service safety inspection and testing of electrical equipment
- ASA 3768: Guide to the effects of temperature on electrical equipment
- AS 3788: Pressure equipment - in-service inspection
- SA/NZS 3820: Essential safety requirements for low voltage electrical equipment
- AS 3873: Pressure equipment - operation and maintenance
- AS 4024: Safeguarding of Machinery
- AS/NZS 4114.2: Spray Painting Booths: Designated spray painting areas and paint mixing rooms – installation and maintenance
- AS/NZS 4360: Risk Management
- AS/NZS 4576: Guidelines for scaffolding
- AS/NZS 4804:2001 OHSMS- General guidelines on principles, systems and supporting techniques
- AS/NZS 4801:2001 OHSMS- Specification with guidance for use

- HB9 – Occupational personal protection

10.3 Appendix 3 - Legislation and Other Sources of information

NSW Legislation:

- *Occupational Health and Safety Act 2000*
- *Occupational Health and Safety Regulation 2001*
- *Dangerous Goods Act 1975*
- *Dangerous Goods (General) Regulation 1999*
- *Firearms Act 1996*
- *Firearms Amendment (Protected Pistols) Act 2003*
- *Firearms (General) Regulation 1997*
- *The Children (Care and Protection) (Child Employment) Amendment Act 1992*

NSW WorkCover

- *How to devise an effective roster*
- *How to manage shift work*
- *Managing chemical hazards in the workplace: advice for managers and supervisors*
- *Skin cancer and outdoor workers: a guide for employers*
- *Workplace personal protective equipment (PPE) program*
- *Guide to Spray Painting*
- *Violence in the Workplace – Guide 2002*

National Occupational Health and Safety Commission (NOHSC):

- *National Code of Practice for Manual Handling*
- *Exposure standards for Atmospheric Contaminants in the Occupational Environment.*
- *Approved criteria for classifying hazardous substances*
- *List of designated hazardous substances*
- *Guidance note on storage of chemicals*
- *National guidelines for Occupational Health and Safety competency standards for the operators of load shifting and other types of specified equipment.*
- *National Occupational Health and Safety Certification Standard for users and operators of industrial equipment.*

British Standards

- BS 3913: Industrial Safety Nets
- BS 5062: Self locking safety anchorages for industrial use

International Standards

- ISO 4866: Mechanical vibration and shock; vibration of buildings; guidelines for the measurement of vibrations and evaluation of their effects on buildings.

WorkSafe Western Australia Commission:

Code of Practice *Control of Noise in the Music Entertainment Industry*

Code of Practice for Safe Use of Lasers in the Entertainment Industry (1995).

(Available from the WorkSafe WA Authority www.safetyline.wa.gov.au)

National Centre for Education and Training on Addiction's "*Alcohol and Other Drugs – Options for Small Businesses*".

AEIA Juvenile Code of Practice

Welding Technology Institute of Australia Technical Note 7 – *Health and Safety in Welding*

Health and Safety Executive (UK)

Crowd Safety Risk Assessment Methodology www.hse.gov.uk/pubns/indg142.htm

The Event Safety Guide – A guide to health, safety and welfare at music and similar events

Useful websites:

WorkCover Authority of NSW - www.workcover.nsw.gov.au

WorkSafe Western Australia - OHS Authority - www.safetyline.wa.gov.au

Victorian WorkCover Authority - www.workcover.vic.gov.au

WorkCover Corporation (South Australia) - www.workcover.com

Workplace Standards Tasmania - www.wsa.tas.gov.au

Workplace Health and Safety (Queensland) - www.whs.qld.gov.au

ACT WorkCover - www.workcover.act.gov.au

WorkSafe (NT) - www.worksafe.nt.gov.au

National Occupational Health and Safety Commission (Aust) – www.nohsc.gov.au

Health and Safety Executive (UK) – www.hse.gov.uk

10.4 Appendix 4 Standard Operating Procedures Tool

Part A

This tool is intended to help you address the health and safety issues that may arise from the jobs and tasks that make up the system of work in your workplace. You should use this tool when you are:

- Designing a new job or task
- Changing a job or task
- Purchasing or introducing new equipment or substances to the workplace
- Reviewing a procedure when problems have been identified, eg from an accident or incident investigation.

Step 1 Who is involved?

In developing safe procedures for a job you need to identify who will do and who will supervise the work.

Firstly, these people probably have a great deal of experience in doing the types of tasks that the job will involve. Consulting them will make the task of developing safe procedures easier. **Moreover, under health and safety laws you are required to consult with your employees on matters which may affect their health and safety**

Secondly, when you are developing procedures you will need to identify any new skills and knowledge that will be needed to do the job safely. Therefore, you need to know what skills and knowledge supervisors and workers currently have.

Involving workers in the design process has been shown to improve their compliance with safety directives, as well as helping job morale by increasing their level of involvement and perceptions of control.

Step 2 What sources of hazards does the job involve?

Jobs usually involve one or more of the following:

- The application of physical effort, such as lifting, standing carrying, pulling – this is often called Manual Handling
- Using equipment such as flying systems, revolves, lifts and hoists, self elevating work platforms etc.

- Working with chemicals and substances such as solvents, smoke and vapour effects, acids, gases, metals etc.

Many jobs involve all three elements. It is important to identify what manual handling tasks, equipment and substances are involved in order to identify the hazards and risks associated with the job (*eg. Lighting rigs can be overloaded, luminaries can emit ultra violet radiation and rigging the truss can present fall risks and falling objects risks*)

It is also important to estimate how long and how often various tasks are done as part of the job (*eg. constant lifting of even small loads can increase risks of back injury; or prolonged exposure to noisy equipment or loud performances increases the risk of hearing loss*).

Therefore, make a list of the manual handling tasks, the equipment and tasks that make up job.

Step 3 What hazards does the work environment involve?

People do their work in a workplace or environment that may present its own OHS problems. For example, tasks may be out in the open so there is the likelihood of exposure to ultraviolet light and the weather; work may be performed at heights, or in a hot area, or close to dangerous plant.

These hazards need to be identified because they can pose health and safety risks.

Step 4 Assessing the Health and Safety Risks

Once the potential hazards have been identified in Step 3, you then need to consider to what extent they pose a risk to health and safety. To do this, you may need to gather a range of information, in addition to your own knowledge and experience, about the potential risks. Good sources of information include:

- **Your own health and safety records**

If the job involves equipment, chemicals or activities that are already part of the various jobs in your workplace you may already have made a record of the risks they pose. Moreover, your injury and illness records may also provide you with information about the risks.

- **Your employees**

Their experience of the workplace and the range of activities that go on are a valuable source of information about potential risks.

- **Material Safety Data Sheets – MSDSs**

For substances, the MSDS will provide information on the health effects of exposure to the substance. It will describe the health and safety risks posed by the substance.

- **User Manuals and Equipment Manuals**

These provide information on the safety issues about plant and equipment. If these are unavailable, you should ask the manufacturer to supply this information to you, especially if you intend to purchase the plant or equipment.

- **Safety Information**

There may be information on the work process from WorkCover, your local industry association, industry training provider or safety group.

The risks identified in this process need to be listed against the particular hazard (*eg. hearing loss from exposure to loud music for significant periods, nausea and dermatitis from exposure to a solvent, fractures from falling from unprotected openings*).

Step 5 Finding Solutions to the OHS Risks

The most important part of the development of safe working procedures is to develop ways to eliminate or control the risks in the work process.

All the above information, besides helping you identify and assess the OHS risks will also help you to address them:

- Employees, from their experience often have good ideas on what to do to address OHS problems.
- Material Safety Data Sheets (MSDSs) provide information on:
 1. How to handle and store chemicals safely.
 2. Ways to reduce possible exposure, such as ventilation, and the correct personal protective equipment that should be worn.
- User and Equipment Manuals provide information on what procedures need to be in place to operate the equipment safely.

In this process, you may develop a number of possible solutions to address the various OHS risks.

Your first obligation is to attempt to eliminate any risk. For example discontinue an unsafe

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activity; look for design solutions to plant and equipment which remove hazards associated with their operation; eliminate a manual handling risk by the use of mechanical lifting devices.

Where elimination is not achievable you must minimise the risk to the lowest level reasonably practicable. You should evaluate the risks based on the hierarchy of controls and select solutions as high up the hierarchy as possible. By doing this, you are ensuring the safest and healthiest workplace possible.

In descending order the hierarchy organises risk control strategies into those that:

- *Substitute the hazard giving rise to the risk with a hazard that gives rise to a lesser risks.* For example redesign the work process so that less hazardous equipment, material or quantities are used; use less toxic chemicals or less flammable substances; have chemicals supplied in smaller quantities if decanting them poses risks.
- *Isolate the hazard from the person put at risk.* For example introduce a restricted work area; reduce emissions and noise from machinery through venting and containment or isolation barriers.
- *Minimise the risk by engineering means.* For example ensure that exposed moving parts on equipment are adequately guarded and lockout devices are fitted; reduce noise levels from machinery by installing dampening methods like mufflers; look for better safety design features on equipment.
- *Minimise the risk by administrative means.* For example organising the way tasks are done can sometimes reduce exposure to risks; job rotation and task variety can reduce the risks associated with repetitive manual handling tasks; provide appropriate safety training, instruction or information; use written safe work procedures; develop preventative maintenance schedules to identify and fix faulty machinery
- *Use personal protective equipment (PPE).* For example, use safety eyewear, hearing protective earplugs or muffs, safety helmets, cut resistant leg protection and reinforced footwear, respirators. PPE is the least preferred solution to OHS problems because it does not really address the hazard but merely provides a shield to protect the worker. While it generally should only be used to supplement other risk reduction strategies or when it is not reasonably practicable to address the risk in any other way, where PPE is a chosen method of risk control for certain tasks or situations, it must be worn at all times when working in those circumstances.

Step 6 Write up Safe Working Procedures

The next step is to write the solutions in Step 5 into Safe Working Procedures.

The Procedure should identify:

- The Supervisor for the task or job and the employees who will carry out the task
- The tasks that might pose risks
- The equipment and substances that are used in these tasks
- The control measures that have been built into these tasks
- Any training or qualification needed to carry out the task
- The personal protective equipment to be worn
- Action to be taken to address safety issues that may arise while completing the task.

Step 7 Train in the Procedures

Once you have decided the procedures that need to be in place you have to consider what training and information supervisors and employees will need to have to support them. You should think about the current knowledge and skills they have concerning manual handling, equipment, substances and the work environment.

Training should be designed to bridge the gap between what they can do now, and what they need to do, to do the job safely.

The training should cover:

1. What the job involves
2. The OHS problems associated with the job
3. The procedures that have been developed to ensure the job is done safely

Step 8 Review procedures

The procedures should be reviewed:

- At regular intervals
- When there is an injury or incident
- When there are changes to the work system such as could come about by introducing new equipment or substances, modifying the workplace, using different types of employees to do the job
- If new information is obtained about a previously unidentified hazard or risk.

SAFE WORK PROCEDURES TOOL

Step 1 Who is involved?	What does the job involve?			Step 4 Assessing the OHS risks	Step 6 Finding solutions to the OHS risks	
Process called?	What tasks comprise the job?	How much? How many? How often? How long??	What are the safety problems	Can we reduce the safety risks?	How?	
	Task	Manual handling			Can the job process or equipment be changed to reduce manual handling? Can we introduce mechanical handling rather than manual handling?	
Who does this job?		Chemicals			Can a safer chemical or a lesser concentration be used? Can we reduce splashes or spills? Can ventilation be improved? What PPE is needed?	
What is the purpose of the job?		Equipment			Can safer equipment be used? Can equipment be modified and made safer? Can use of equipment be reduced? What PPE is required to work safely?	
	Task	Manual handling			Can the job process or equipment be changed to reduce manual handling? Can we introduce mechanical handling rather than manual handling?	
		Chemicals			Can a safer chemical or a lesser concentration be used? Can we reduce splashes or spills? Can ventilation be improved? What PPE is needed?	
		Equipment			Can safer equipment be used? Can equipment be modified and made safer? Can use of equipment be reduced? What PPE is required to work safely?	
	Step 3 What is the work environment?					
	Environment	Noise, Air, Traffic Hazardous Activities			Can the temp be more comfortable? Can noise be reduced? Can air quality and ventilation be improved?	

10.5 Appendix 5 – Sample Risk Assessment Format

A General Purpose Risk Assessment Guide and Template For The Australian Live Theatre Industry

The Occupational Health & Safety legislation in Australia requires employers to eliminate any reasonably foreseeable hazards and risks, to all persons in workplaces.

1. And if this cannot be done, they must control the risk to the lowest level possible using a Hierarchy of Controls Eliminate the HAZARD giving rise to the RISK.
2. Or if not possible, substitute the HAZARD giving rise to the RISK with a Hazard that gives rise to a lesser risk.
3. Isolating the HAZARD from the person put at RISK.
4. Minimising the RISK by administrative means i.e.: Safe work practices or provision of adequate instructions, training and/or information.
5. Provision of Personal Protective Equipment

What are Hazards and Risks?

A HAZARD is defined as a potential to harm the health or safety of a person or damage property.

A RISK is defined as the probability and consequences of illness or injury to a person or damage to property.

The points on this page are intended as prompt/guide for venues & presenters.

1. This information pack should be issued at time of booking of venue.
2. When venue hire contract is returned, the venue should enquire;
 - Did the producer receive the Risk Assessment pack?
 - Did they understand it?
 - Does the producer require any assistance or information from the venue?
3. Time Line. The Risk Assessment should be submitted to the venue no less than 2 weeks prior to bump in. It is recognised that some RISK documentation may have to be amended after the Bump In, to take into account local venue needs and that some Sign Offs cannot occur until the Production is fully in place.
4. The Risk Assessment should begin at the concept/design stage, but it MUST include;
 - UNLOAD/LOAD NOTES OR INSTRUCTIONS.
 - BUILD & RIG/ DISASSEMBLE & DE-RIG NOTES OR INSTRUCTIONS.

- ACTUAL RUNNING OF SHOW NOTES AND OR INSTRUCTIONS.
- PLANS

5. Supporting Documentation, includes but is not limited to;

- Flame retardant used.
- Rigging to be used.
- Plant design approvals and/ or registration certification where required
- Any Engineering Certificates
- Material Safety Data Sheet on all substances used
- Schedule, also identifying any speciality skills that may be required, eg, fork lift driver, Rigger, scaffolder etc.
- Schedule must be realistic and achievable

RISK ASSESSMENT

PRODUCER/PRESENTER: _____	PRODUCTION: _____
VENUE: _____	DATE IN: __ / __ / __ DATE OUT: __ / __ / __
<u>NAME & CONTACT DETAILS OF PERSON (S) WHO CONDUCTED THIS ASSESSMENT</u>	
1. _____ _____	4. _____
2. _____ _____	5. _____
3. _____ _____	6. _____
VERSION NUMBER: _____ DATE: __ / __ / __ REVIEW DATE: __ / __ / __	
BRIEF DESCRIPTION OF PRODUCTION: _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	

[illegible][illegible]

HAZARDS

Below is an example of a hazard checklist. It should be recognised that this list is not exhaustive. Each production must ensure that all foreseeable risks are identified.

- Slip/Trip i.e. treads or stairs, wet areas, rake stage etc
- Falls from Height i.e. open floor traps, stairs without handrails, platforms without handrails etc
- Falling Objects i.e. non secured scenery, counterweights, non secured lighting fixtures, props etc
- Plant and equipment i.e. automation, rigging and scaffolding, flown pieces, flown people, winches etc
- Traps & Pits i.e. actors traps, any sunken area etc
- Stage load limits
- Grid load limits
- Fire risks i.e. naked flames, pyrotechnics, gas, welding etc
- Integrity of fire control devices i.e. Fire Curtain, fire hydrants and fire extinguishers, use of smoke or fogs that could require isolation of fire detection equipment
- Electrical risks i.e. all equipment to be tested and tagged
- Hazardous substances i.e. all chemicals and organic materials must have a material data safety sheet
- Lasers, strobes and smoke machines
- Noise – i.e. loud bangs, continuous noise
- Projectiles
- Firearms and Weapons i.e. Prop guns, swords, knives etc

RISK ASSESSMENT TEMPLATE (Refer to Section **3.3** for information on assessment)

		Consequences			Production:			Insert Company Logo Here
Probability	Kill or Disable	Long term illness/injury	Medical treatment + Several Days Lost	First aid only	Person responsible for Risk Assessment:			
Very Likely	1	1	2	3	Department:			
Likely	1	2	3	4				
Unlikely	2	3	4	5				
Very Unlikely	3	4	5	6				
					Date:			
No	Hazard Identified	Consequence	Likelihood	Risk Priority	Existing Controls	Additional Control Measures required	Responsibility	Date Completed

Identify those to consult and those at risk. Leave space under each identified hazard for review process

Issue Date: .../.../...

Review Date: .../.../...

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10.6 Appendix 6 - Sample induction check list for employees

ISSUE TO BE ADDRESSED	DATE	COMPLETE
1. Occupational health and safety procedures and policies		
2. Overall legislative responsibilities of employers and employees		
3. The procedure for reporting hazards		
4. The procedure for reporting incidents or near misses		
5. Emergency procedures including evacuation routes and emergency contact numbers		
6. Control measures for known workplace hazards for the area in which they will be working.		
7. Safe use of substances, equipment, tools and plant they will encounter in their job.		
8. Appropriate manual handling methods for the materials and objects that will be encountered in the job.		
9. The use of personal protective equipment – where, when and how it is to be used and maintained.		
10. The procedures for reporting injuries and rehabilitation.		
11. First aid facilities and procedures.		
12. The health and safety representative and health and safety committee structure and objectives.		
13. The arrangements for oversight and supervision of occupational health safety and welfare.		

I have been provided with information and understand both mine and my employer's responsibilities with respect to the issues outline above.

Signed.....

Date

10.7 Appendix 7 Noise Control in the Entertainment Industry

The *Control of Noise in the Music Entertainment Industry* code of practice recommends development of a noise report for each new show. The noise report includes choosing a **reference position** for measurement of sound pressure levels.

❖ Examples of reference points are:

- For a theatre - at the orchestra pit conductor's position about 3 metres from the front of the stage and control measures being implemented if "**Action Levels**" are exceeded.
- For venues which have live bands performing regularly the reference position should be 5 metres from the front of the main loudspeakers at least 1.8m above floor level and centrally located in front of the performers,
- For other venues the reference position may be any nominated monitoring point where the music dominates the sound levels.

❖ If on assessment, the sound pressure level is above the **action level** exposure of employees should be reduced either by: (in order of preference)

- reduction of the sound pressure levels;
 - reducing the length of time employees are in noisy areas;
 - reducing the sound pressure level during rehearsals
- or
- providing appropriate personal hearing protection that has Australian Standards approval.

❖ A noise control policy should be developed on a consultative basis by all employers which sets out goals for noise exposure levels to be achieved and the strategies for achieving the set goals.

❖ Information should be provided to all employees on:

- The risks associated with noise exposure
- The control measures put in place to protect hearing.

❖ Information on sound pressure levels contained in the policy should be communicated by venue managers to all hirers of venues, preferably at the time of hire.